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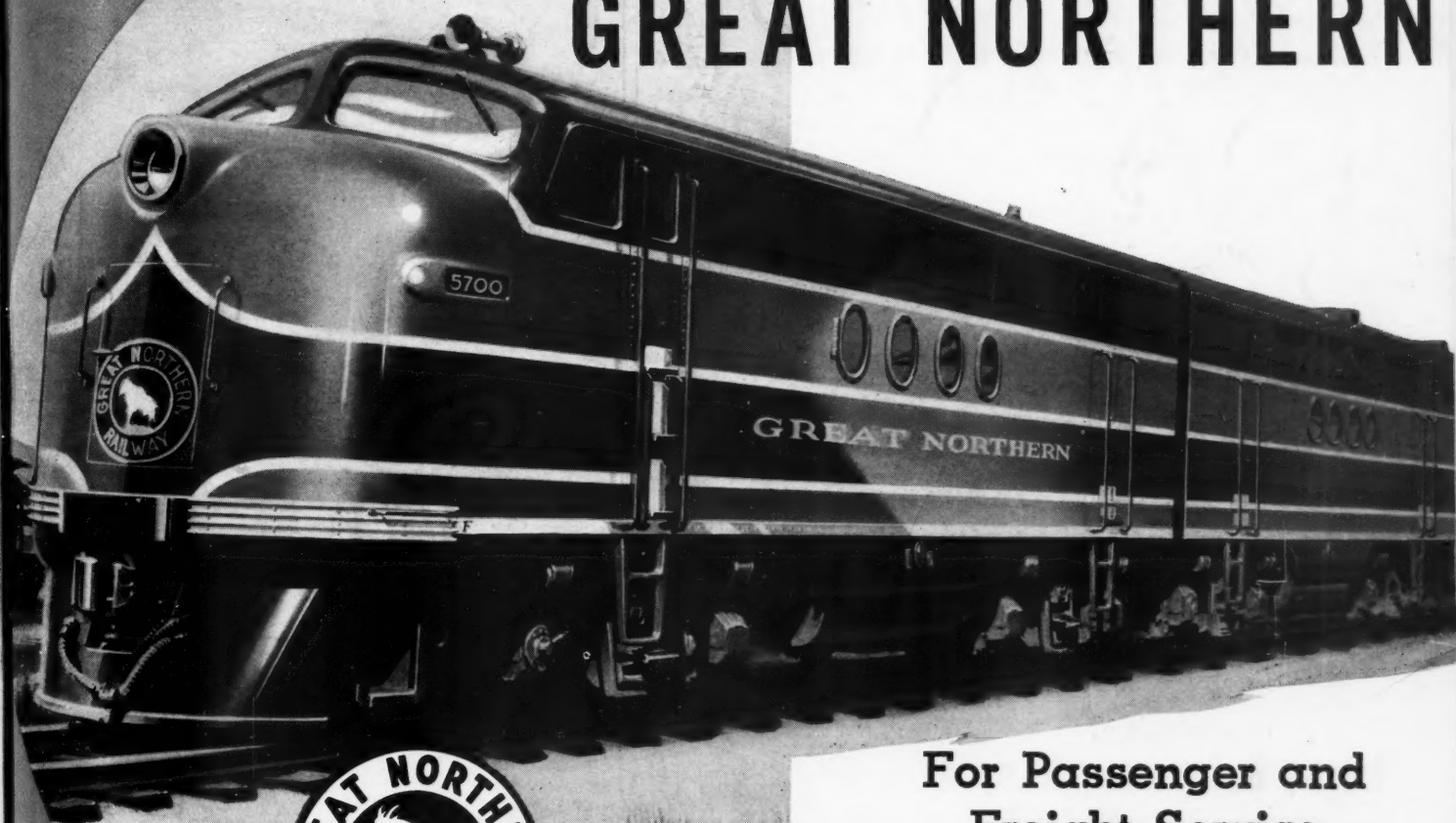
June 14, 1941

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Railway Age

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In This Issue

Rail Stress Measurements of Counterbalancing Effects Page 1049

Abstracts from the report of tests conducted by the A. A. R. on the Chicago
& North Western which demonstrate the value of cross balancing.

Many Outstanding Features of Construction Mark Southern Pacific Shasta Line Change . 1054

W. H. Kirkbride, chief engineer of the Southern Pacific, in this article describes
the standards and methods followed in this 30-mile diversion in Northern
California.

Superintendents Hold "Brass Tacks" Convention . . 1064

A report on the 47th annual meeting of this group, together with abstracts
from the principal addresses delivered.

EDITORIALS

Extortionate "Patriotizing" by the Railway Labor Unions.....	1041
Varying Coal Equivalents Affect Fuel Comparisons.....	1044

GENERAL ARTICLES

Transportation Economy for National Defense.....	1045
Mechanical Division Meeting	1046
Priorities—and the Railroads.....	1047
Rail Stress Measurements of Counterbalancing Effects.....	1049
Many Outstanding Features of Construction Mark Southern Pacific Shasta Line Change, by W. H. Kirkbride.....	1054
Railways Prepared for Wheat Crop.....	1061
Superintendents Hold "Brass Tacks" Convention.....	1064
4—How Referee Stone Lost 179 Cases.....	1070
St. Lawrence Message Goes to Congress.....	1071

NEW DEVICES 1073

NEWS 1085

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RAILWAY AGE

Extortionate "Patrioteering" by the Railway Labor Unions

The controversies between the railways and the labor unions resulting in general wage advances in 1937 and in no reductions in 1938 were actually settled by the national administration. The controversies being caused now by (1) various demands of the labor unions the granting of all of which would increase the railways' payroll by about 770 million dollars a year, and (2) proposals of the railways for changes in working rules in engine, train and yard service, will doubtless also finally be settled by the national administration. The present administration always has shown that, while constantly engaged in creating public sentiment, it is also strongly influenced by it. Therefore, public sentiment can apply influence where it will be effective; and if it does not want, during the "unlimited national emergency" the President has declared exists, to have directly loaded upon its railway system, and indirectly upon the public itself, huge additional costs the public must unmistakably, loudly and strenuously oppose this being done in the right ways and through the right channels.

Public Sentiment Must Exert Itself

Railway managements firmly resisted the movement for advances in wages in 1937 until bluntly told by government mediators that unless they "voluntarily" granted increases the controversies would be determined by persons of the highest position in Washington who might cause settlements worse for the railways than they could get through mediation. The opposition of the public to advances in wages at that time was plainly shown by editorials in the press and many resolutions adopted by civic, business and agricultural organizations. But this public opposition was not exerted strongly enough and through the right channels to be effective. Again in 1938 public sentiment unquestionably favored the 15 per cent wage reduction for which the railways asked; but the President prevented it by

appointing a "fact-finding commission" which reported against any reduction—not because the railways did not need it, but upon the ground that they had more to gain by co-operating with their employees in behalf of helpful legislation, etc. And again, because public sentiment did not make itself forcibly felt by the right people in Washington, the wage advance remained in effect.

Why Oppose Advances in Wages?

Because the *Railway Age* repeatedly has opposed advances in wages, as in 1937, and advocated reductions, as in 1938, it has been accused of being anti-labor. This paper's policy is based upon a very definite economic and social philosophy. The major premise of this philosophy is that the **welfare of the people as a whole** always should be given paramount consideration, and that nothing contrary to it should be done. The national income should be made as large as possible by means which will cause the greatest practicable production. To this end, each class should be allowed to participate in the national income as nearly as practicable in proportion to its contribution to production.

Under the political and economic system which heretofore has existed in the United States there normally has occurred technical progress which has increased production per worker—and by "worker" we mean anybody who does useful work, not merely somebody who works with his hands in a factory, or on a railroad, and belongs to a labor union. The only way to distribute the benefits of increased productivity and production throughout the population is by reducing prices and rates in proportion as productivity and production increase. **Only** in this way can technological progress be made to result in proportionate economic progress. For reductions in prices and rates for commodities and services of all kinds are the only means of increasing the demand of the entire people for commodities and

services of all kinds; and this increase in demand is essential to cause further technical progress and increase of production, thereby making possible further reductions of prices and services.

The Monopolists—of Business and Labor

There are two classes of persons who strongly resist this process essential to both technical and economic progress—the monopolists of business, and the monopolists of labor. The monopolists of business try to maintain or advance prices and rates for the purpose of translating all the benefits of technical progress into increased business profits. The monopolists of labor try to advance wages faster than technical progress increases productivity in order to get for wage earners all the benefits of technical progress—thereby, if they are successful, preventing the benefits from being diffused through reductions of prices and rates among the entire people. If and when either group of monopolists, or both together, confiscate all the benefits of **technical** progress they largely or wholly prevent **economic** progress; because it is essential to economic progress that the benefits of technical progress shall be so diffused in prices and rates throughout society as to increase the buying power of **all the people** in proportion to the technical progress made.

The Railways' Part in Defense

We are now in the midst of a period when government is demanding the maximum possible increase in the production of goods in order that (1) the entire people may be able to maintain their standard of living while (2) there is secured an enormous increase of production, especially by the durable goods industries, for national defense. The government is demanding that every person shall contribute every effort he can toward this increase of production, and, if total production cannot be made adequate both for defense and maintenance of the standard of living, that each shall make his share of the necessary sacrifice in his standard of living. The railways are one of the nation's most vital defense industries. It is essential to the welfare of every inhabitant of the United States that, first, the railways shall be made able to carry every pound of traffic, commercial or defense, that is offered them, and, second, shall be able to handle the traffic at costs which will not directly or indirectly impose unnecessary burdens upon those that they serve—that is, the entire people, each of whom, without having to pay excessive railway costs, will have his share of the burden of taxes and other total costs to bear.

Railway Unions' Exorbitant Demands

At this critical juncture the railway labor unions come forward with demands that include additional

employees on locomotives who would have nothing to do but ride; for vacations with pay that also would reduce the work done by employees; and for advances averaging 41 per cent in the highest pay that they have ever received—30 per cent for the operating (train service and yard) employees and an average of 47 per cent for the non-operating employees.

One reason given by the transportation employees is an alleged 43 per cent increase in "productivity" since the last wage advances were made four years ago. We never know upon what data they base such claims; but based on any available data the claim of a 43 per cent increase in "productivity" by any class of employees is an exaggeration so gross as to be unsupportable by any evidence whatever. It is true there have continued to be, as there always have been, increases in the amount of traffic handled, on the average, by each locomotive, car and train; but obviously these are not due to the efforts, either intellectual or physical, of the employees, but to technical progress causing improvements in railway fixed properties, equipment and operating methods. Are the investors in the railways, whose investment has made these improvements possible, never to derive any benefit from them in increased net earnings? Is the public to derive no benefit from them in the rates that it pays?

Wage Demands Versus Increased Railway Earnings

Increased railway earnings are given as another reason for advances in pay. Throughout the last decade the railways have suffered terribly from reduced earnings. They made during this decade an average return of only 1.63 per cent on their property investment, and in 1940 made only 682 million dollars net earnings before fixed charges and only 191 million net income after fixed charges. Nevertheless a general advance in wages was made in 1937, as a result of which railway wages have been since and are now the highest in history.

The increases in the payroll now being demanded would largely exceed the total net earnings made last year, and would be **four times** as large as the net income made. Both gross and net earnings are running larger this year. In the first one-third of 1941 the railways earned at a rate of 3.85 per cent on investment, or about a billion dollars annually. But the increase of 770 million dollars a year in the payroll now being pressed for would wipe out three-fourths of net earnings at the annual rate at which they are now being made, and **reduce them below what they were in 1932, the worst year of the depression**. In order to provide for their share of the defense effort the railways are placing the largest orders for equipment and materials in more than a decade. Incontrovertible data show that their power to buy from the manufacturing industry always has been determined by their **net earnings**.

What do the labor-union leaders expect the railways to use in place of money in paying for equipment and materials to handle commercial and defense traffic if their demands are granted?

Proposed Average Advance 81 Per Cent Measured by Cost of Living

Another reason given by labor leaders for their demands is that railway employees suffered severely during the depression. Most persons did—but not all; and those who remained on the railway payroll decidedly did not. They agreed to a reduction of 10 per cent in pay which was in effect in 1932 and 1933, and was partly in effect in 1934; but in those years the cost of living averaged 23 per cent less than in 1929. Hourly earnings of railway employees averaged more in 1935, 1936 and 1937 than in 1929; while in these years the cost of living averaged 18.4 per cent less than in 1929. Following the advances made in 1937, average hourly, weekly and annual pay of railway employees was the highest in history in 1938, 1939 and 1940; but the cost of living in those years averaged 18.2 per cent less than in 1929. **The only railway "employees" who suffered during the depression were those who were unemployed; and many thousands of them were unemployed because wages paid to those who were employed were excessive under depression conditions.**

In spite of all the foregoing facts, the labor leaders give "increasing cost of living" as a reason for a further wage advance. The increase in the cost of living that has occurred since the war in Europe began has been so small that it is now only about the same (according to government figures) that it was in 1937 when the last wage advances were made. The average hourly wage of all railway employees is now about 13 per cent higher than in 1929. Therefore, measured by the lower cost of living, it is 28½ per cent higher than in 1929. And an advance averaging 41 per cent would make it 59 per cent higher in money, and 81 per cent higher measured by the cost of living than in 1929!

Would Make Railway Weekly Wages 78 Per Cent Higher Than in Manufactures

Another argument advanced is that railway wages have lagged behind those paid in industry; and it has been asserted by the labor unions in a statement to the public that they compare unfavorably with some of the lowest paid in 25 branches of manufacturing. According to the Bureau of Statistics of the United States Department of Labor the average hourly earnings of all wage earners in manufacturing industries in February, 1941, were 69.2 cents and their average weekly earnings were \$28.56. In the same month the average hourly earnings of all railway wage workers were 77 cents. And their average weekly earnings in Febru-

ary were \$36.58, or 28 per cent higher than those of factory workers. An advance of 41 per cent would make the average hourly pay of railway wage earners over \$1.08 an hour or 57 per cent higher, and their average weekly earnings 78 per cent higher, than those of wage workers in factories were in February. There have been advances of wages in some manufacturing industries since February, but none remotely comparable with those being demanded of the railways.

Wasteful "Featherbed" Rules

The highest-paid employees of the railways, and the highest-paid in any industry in this country or in the world in proportion to the number of hours they work, are those in engine and train service. As forcibly emphasized by C. E. Johnston, chairman of the Western Association of Railway Executives, in a statement quoted in the *Railway Age* last week (June 7), page 1009, these employees are also beneficiaries of the "featherbed rules," under the notorious interpretation of which by referees of the Railroad Adjustment Board they have been getting many hundreds of thousands of dollars of so-called "back pay" for doing almost no work, or actually none at all. Yet their unions were the first to announce the demand for a 30 per cent advance in their basic pay. Before this demand was presented the railways of western, eastern and south-eastern territories made proposals for revision of working rules in engine, train and yard service; and Mr. Johnston, in his statement, cited only a few of almost innumerable examples than can be cited of the excessive costs and wastes in operation resulting from the way in which present rules are being misinterpreted and applied. Plainly, a real revision of these rules should be secured before there are any negotiations regarding wage demands of the engine, train and yard employees.

The Menace of Inflation

The greatest economic danger with which the American people are threatened is inflation. There has been much talk for years about the strong tendency of the policies of the present administration to cause it; but this talk has had little effect upon the public mind, because few really understand what inflation is, what causes it and what are its effects. It is a cycle of increasing prices—and of cost of living—which, once started, occurs so fast that advances in wages cannot possibly be made rapidly enough to keep pace with it, and which finally destroys the value of a nation's money and all investments in fixed interest-bearing securities—savings in banks, government bonds, bonds of private corporations, life insurance policies and so on. Such inflation occurred in some of the countries of Europe after the war, but especially in Germany where money became absolutely worthless.

It is a most significant and ominous fact that every

real national revolution in history has been preceded, and largely or wholly caused, by inflation. It preceded the downfall of the Roman Empire, the great revolution in France, the Communist revolution in Russia, the Fascist revolution in Italy and the Nazi revolution in Germany. It is always equally disastrous to the middle and working classes; and it causes revolutions because it so enrages the saving, investing and property-owning middle class that the middle class either joins with the working class in overthrowing the government, or, as in Italy and Germany, overthrows the government regardless of the working class' opposition.

Leon Henderson on Railway Wages and Inflation

Inflation usually is started and finally consummated by just such reckless policies of government spending, advances in wages and prices, then further advances in wages to offset advances in prices, and then advances in prices to offset advances in wages, as are now being followed in this country. The New Deal administration, after having for years scouted the danger of it in the United States, recently has been becoming alarmed about it and adopting some timid measures to forestall it. It has begun trying to control prices and rentals while causing the increases of taxes and not resisting the advances in wages which, if continued, will inevitably give it such a start that no power on earth can stop it.

Very recently some spokesmen of the administration have been betraying fear even of advances in wages. Leon Henderson, who has been put in charge by the administration of controlling prices and rentals, was testifying on May 19 before the Senate agriculture committee. A committee member asked if he had made any effort "to fix the price of labor"—remarking that "rising transportation costs seriously affect all other costs." Henderson replied, according to the Associated Press, that "he would oppose a suggested 30 per cent increase in railway wages if the increase could be absorbed only through increased transportation costs." Well, obviously an average of 41 per cent couldn't be absorbed in any other way, if the railways are to continue employing enough men and buying enough equipment and materials to render the rapidly increasing service being demanded of them by the expansion of both commercial and defense traffic—especially the latter.

Railway Unions "Patrioteering" the Most Inflationary Movement Started

It is a plain fact that the wage demands being made by the railway labor unions constitute the most menacingly inflationary movement that has emanated from any source whatever. The railways are now operating with the greatest efficiency and economy in their history. If they should curtail their employment and buying to absorb an advance in wages they would render

themselves unable to render the service that the present national emergency demands of them. If they should *not* curtail their employment and buying to absorb an advance in wages they would have to add it to the cost of their service, and, to offset it, secure either an equivalent advance in rates, or equivalent subsidies from the federal government. But obviously a sufficient advance in rates or sufficient government subsidies (provided, of course, by additional taxation of the public) would equally increase the burden imposed upon the public and be equally inflationary.

The government has said that there must be no "profiteering" during the defense effort, or during war if we get into it. As a substitute for "profiteering" by business we are having **patrioteering** by many, especially by organized labor. We are told by government spokesmen that everybody must make sacrifices; but the position of organized labor and especially organized railway labor—in the sacred name of patriotism, of course—is that it is the duty of everybody else to allow himself to be sacrificed in order to make defense and war a Roman holiday for union labor.

Varying Coal Equivalents Affect Fuel Comparisons

In interpreting locomotive fuel performance statistics, as reported to the Bureau of Statistics, Interstate Commerce Commission, comparisons of the performances of different railroads are apt to be misleading because of fundamental differences in the conditions which affect the operation of different lines. This being true even in the case of roads that use the same kind of fuel of the same heat value and similar in other characteristics, it applies with still greater force to comparisons on roads that use different kinds of fuel, i.e., coal, oil, Diesel fuel, gasoline and electric current, or that use these fuels in different proportions.

Under existing instructions, the monthly consumption of the various kinds of fuel and power are reported to the I. C. C. by each railroad "reduced to their equivalent in net tons of coal, using such ratios of equivalence in heating values as the experience of the respondent indicates are applicable to local conditions." These quantities, stated as net tons of coal, are combined in the statistical statements of performance for the various districts and regions and for the Class I railways as a whole.

For many years fuel department men on the railroads have been concerned over the wide variation in the "coal equivalents" used by the various railroads, and the subject has been considered on more than one occasion by the Committee on Fuel Records and Statistics of the Railway Fuel and Traveling Engineers' Association. In its report for 1940, this committee showed the ranges of values given in the table, as being used on 30

of the largest Class I railways. The coal equivalents were reported to be based upon various methods of determination, such as comparative service tests, comparative heat content, comparative heat content and thermal efficiency, and coal consumption per kw. hr. in public utility producing plant.

Variation in Coal Equivalents Used on 30 Large Class I Railways

	Minimum	Maximum	Average
Coal, B.t.u. per lb.	10,295	14,000	12,500
Fuel oil, gal. per net ton of coal	115	215	161
Diesel oil, gal. per net ton of coal	15	215	45
Gasoline, gal. per net ton of coal	15	223	97
Electric current, kw. hr. per net ton of coal	350	2,000	1,084

Transportation Economy for National Defense

There is much *ex post facto* evidence to indicate that the long-run results of the moratorium the railroads declared during World War I on rate readjustments which would bring lower rates, were not favorable. It is difficult, of course, to determine how much of the diversion or destruction of traffic which has taken place since the last war is ascribable to freezing rates at that time and how much has arisen from the 15, 25 and 40 per cent increases; or from causes besides the rate structure. But few would care to deny that rate rigidity, combined with percentage distortion, had something to do with subsequent unfortunate developments.

It is also impossible to state positively how much less the loss in railroad traffic might have been if the carriers had followed the practice of competitive industry and kept their rates adjusted to current price levels and other competitive influences (assuming that such a policy had been possible). Be that as it may, and regardless of moral or economic justification, the maintenance of railroad rates, following the war, at higher levels when other prices were diving downward, must have provided some of the incentive which led to the enormous development of rival transportation agencies in the '20's and '30's; and to the "de-centralization" of industry.

The railroad policy toward the rate structure made a convenient bridge-head on which the infant motor trucking industry gained its first firm foothold; and the same structure later enabled the lusty new rival to establish an operating radius at least twice as long as its *inherent* economy justified; and hence to capture about twice as much traffic and revenue from the railroads as was "in the cards" for it to get.

If the rates on what is known as the "cream of the traffic" had been set at 25 per cent less, the total initial sacrifice in freight revenues by the railroads probably would not have been 5 per cent—or the merest fraction of what was ultimately lost by clinging to a monopoly system of rates when market conditions had become competitive. Such a realistic change in rate policy would have largely prevented the trucks from engaging in long-haul business. It would probably also have forestalled the enormous decentralization of this character of

For its report for 1941 to be presented at the annual meeting in Chicago, September 23-24, the committee has been directed to prepare and present for consideration proposals for uniform formulae that might be adopted by all the railroads for determining the coal equivalent of each kind of fuel and power. While it is not anticipated that agreement can be obtained to the use of rigid formulae for general application, it is expected that formulae can be proposed which will take into account any reasonable local variations and at the same time narrow materially the present extreme variations in values.

traffic, which has created a relatively much greater proportion of short-haul traffic susceptible of being trucked.

Far-seeing railroad men will not want the steps they may have to take to meet the exigencies of the present rising level of prices to catch them in a competitive trap, almost as dangerous as an inadequate general rate level (and more so in the long run). The problem of the general rate level ought to be kept separate and distinct from that of competitive adjustment of individual rates. Foresighted pricing statesmanship cannot permit a threatened "tightness" in cars and a prospective increase in trucking and railroad costs to again tempt the industry into a blanket moratorium against any readjustments. Such rule-of-thumb prohibitions might work under conditions of monopoly—but under the rapid-fire changes of a competitive era they cannot be anything else but gradual suicide.

With the opportunity for the trucks to "pick and choose" which they enjoy from the present rate structure; their ability to depreciate fully in just a few years the moderate additional investment which would be necessary for them to handle new business; and their continuing to show relatively much greater traffic gains than the railroads—the railroads may well find themselves in a much more difficult competitive position at the end of this war than they face today. Unit costs are largely determined by volume, and continuing loss of traffic will increase unit costs and make it increasingly difficult to compete.

A modern war is a war of production. Wasteful methods of performing any economic function reduce this country's military effectiveness and, for that reason, aid the cause of its enemies. There is enormous waste in transportation today by reason of trucks operating beyond the radius of their true economy, and that waste can only be corrected by rate adjustments—because the traffic flow is directed by rates. The railroads owe it to themselves and their post-war security, as well as to the defense of the nation, to proceed with the adjustments needed to establish true economy in the competitive transportation situation; and to deal with any changes which may later be needed in the general rate level as a separate and distinct problem.

Mechanical Division Meeting



W. H. Flynn
Division Chairman

THE nineteenth annual meeting of the Mechanical Division, Association of American Railroads, will be held at St. Louis, Mo., on Thursday and Friday, June 19 and 20, in the main ballroom of the Jefferson Hotel. On Thursday, the meeting will convene at 9 A. M. and adjourn at 5 P. M. The Friday session will also convene at 9 A. M. and will continue until the program is completed.

Reports of 12 standing committees will be presented

and discussed. In the convention calendar it is suggested that the committees limit themselves in the presentation of their reports to a brief summary of their principal features. The convention calendar also states that the Committee on Subjects will be appointed by the chairman at the opening session on Thursday, June 19, to receive questions for discussion from the members. This committee will determine whether such questions are ones suitable for discussion and, if so, will report them to the Division at the proper time for discussion by the members. Members are requested not to start discussion on subjects at the session of the meeting which have not first been referred to the Committee on Subjects.

The details of the program are as follows:

THURSDAY, JUNE 19

Address by L. W. Baldwin, president, Missouri Pacific
Address by Chairman W. H. Flynn, general superintendent
motive power and rolling stock, New York Central
Action on Minutes of annual meeting of 1940
Appointment of Committee on Subjects, Resolutions, etc.
Unfinished Business
New Business
Report of General Committee

Report of Nominating Committee
Discussion of Reports on:
Lubrication of Cars and Locomotives
Brakes and Brake Equipment
Couplers and Draft Gears
Joint Committee on Utilization of Locomotives and
Conservation of Fuel
Locomotive Construction

FRIDAY, JUNE 20

Discussion of Reports on:

Arbitration
Prices for Labor and Materials
Tank Cars
Loading Rules

Wheels
Specification for Materials
Car Construction
Committee on Resolutions

Priorities — and the Railroads

The responsibility for obtaining materials essential for the maintenance of transportation service rests upon railroad officers—not the suppliers

A QUESTION uppermost in the minds of mechanical officers—and all other railroad officers responsible for the maintenance of the facilities used in furnishing transportation—is, “Are the railroads going to be handicapped in the matter of equipment, supplies and materials needed to carry on our work?” Each week, under present conditions, the demand for motive power and cars is mounting and many roads that have operated for several years at greatly reduced stock inventories are finding numerous operations delayed because of an actual shortage of, or at least distant delivery dates on essential materials.

Orders now being placed through railroad purchasing departments for these materials are too often held up by the manufacturer awaiting the railroad company's reply to a request that it furnish a “preference rating.” What the railroad's next move is in many of these cases seems to be open to some doubt, for the railroads, as an industry, have no preference rating.

The following paragraphs from the *Railway Age Gazette* of November 2, 1917, are repeated here because they illustrate the most important single difference in the status of the railroads with respect to materials as of June, 1941, and November, 1917.

“The operation of the priority system must inevitably have an important bearing on the work of railway supply companies and upon even the operation and maintenance of the railways as well as upon their plans for improvements, because the scarcity of materials and supplies necessary to railway work is such that it will be necessary to secure priority orders in order to obtain what is required and precedence must be given to the orders and to the work deemed most essential to the successful prosecution of the present war.

“The Priorities Committee has recognized the indispensable character of the service being performed by the railways and has generally followed the practice of classifying requests for priorities for railway materials as next in importance to actual war orders.”

The Priorities System

Twenty-four years ago the railroads were being granted a high priority rating because the War Industries Board of the Council of National Defense recognized their indispensability in time of national emergency, whereas today, they find themselves in the position of having to appeal for preferential treatment, as one railroad officer put it, “every time they want a dozen bolts.” Preferential treatment, under present circumstances, requires an application for a preference rating for practically each individual requirement. Anticipating a growing state of confusion as the needs become more acute, most railroad officers are of the opinion that the industry should work toward the end of securing a high automatic rating similar to that given them by the Priorities Division of the War Industries Board in 1918.

The priorities system in effect at the present time was set up under authority given to the President in Section

2A of Public 671 which declares, in part, that in certain circumstances of emergency, defense orders “shall take priority over all others for private account or for export . . .” This authority is now vested in the Priorities Division of the Office of Production Management and the Director of Priorities. The task of handling priorities in the strictly military sphere is given to the Army and Navy Munitions Board and, in the non-military sphere, imposing industry-wide controls when necessary to the Priorities Division. This division administers all requests for priority ratings on civilian projects and handles the allocation of all materials—say for example, aluminum—which are subject to industry-wide control.

Those materials and products which are vital to the military establishment and are under the control of the Army and Navy Munitions Board are handled by the creation of a Priorities Critical List, an alphabetical list of almost 300 items needed for defense and on which priority certificates can be issued automatically. The order of importance of these items is fixed by what is known as the Priorities Directive, an established list of preference ratings applicable to the Critical List.

There are, in general, three broad steps which the Priorities Division can take to give aid. These are (1) blanket ratings of a limited type designed to help certain companies or projects in urgent situations to obtain needed materials quickly; (2) individual preference rating certificates issued to manufacturers for specific orders to meet specific problems, and (3) industry-wide priority control usually involving the allocation of available supplies.

Blanket ratings.—A blanket rating is a technique adopted to avoid the necessity for dealing with a number of closely allied problems in the same field through an unwieldy number of preference rating certificates. In cases of this kind speed and efficiency are both important factors. In the case of blanket ratings a time limit is included in the general preference order assigning such limited blanket rating so that the preferential treatment does not run on indefinitely and other specific restrictions are imposed. Blanket ratings are issued only to companies producing the same kinds of products and working practically entirely on defense work.

Individual certificates.—Individual certificates are issued upon application to manufacturers who may be working on both defense and civilian projects. In the case of individual certificates the Priorities Division, having satisfied itself that the plea for assistance is justified, grants a certificate with a specific rating. Inasmuch as the priorities system is designed primarily to aid the defense program, the Priorities Division issues preference rating certificates only when such action is necessary to aid the defense program—and the connection with defense is clear—or to aid some obviously vital civilian program.

Industry-wide control.—Industry-wide control is imposed in the case of vital materials as shortages exist in order that available supplies may be conserved and allocated wisely, both for defense and non-defense purposes, to such control as imposed by the Priorities Division.

Aluminum is a well-known example of a material placed under industry-wide control.

Preference Rating Schedule

The preference ratings in the order of precedence are AA, A-1-a to A-1-j, A-2, A-3 . . . to A-10, BB, B-1, B-2 . . . to B-8. All of the A ratings are given to defense orders. The BB rating is an emergency rating for civilian needs. The B-1 preference rating is assigned to orders for the manufacture of materials which enter into the fulfillment of defense orders.

Who Takes the Initiative in Requesting Ratings?

While there seems to be some doubt in the minds of many mechanical men as to who should make application for priority rating—the railroad company or the manufacturer—it should be stated, in all fairness to the department most concerned with this question of priorities, that there is evidently no doubt in the minds of railway purchasing officers that it is the obligation of the *railroad company* to secure preference ratings on materials such as may require ratings.

In fact, the instructions which appear on Form PD-1, used for making application for preference rating, specifically state that "Applicant must be the *user* of the material, equipment, or service, excluding labor, hereinafter called 'material.' A separate application must be filed for each case presented. 'Each case' means each need for specific material which can be filled by a *single* supplier and which is for use in completing a specific contract. . . . Thus separate orders with a supplier may be covered by a single application, if the material on each order is similar and for use in completing the *same* covering contract (s). If orders for identical material are placed with *several* suppliers, a separate application must be filed for *each* supplier."

* * *

When application is made for a preference rating to the Priorities Division, O. P. M., all information that may be of value in securing the best possible rating should be supplied in the application. It is in this respect that mechanical officers can be of invaluable assistance to their purchasing departments by first acquainting themselves with the materials that are under priority control and the operation of the priorities system itself. Having done this they should be conscious of the necessity of furnishing all important information to the purchasing department at the time the requisition is made.

While there may be shortcomings in the present priorities system, which will undoubtedly be corrected with experience, it should be the purpose of every railroad officer who comes in contact with the operation of it so to acquaint himself with the necessary information concerning it that he may make every possible move to facilitate the delivery of essential material to his company.

Mechanical Officers' Responsibility

Mechanical officers have a definite responsibility in this matter of procuring needed materials to carry on the work of maintenance of equipment. Regardless of what may have been their feeling up to this moment, from now on each problem relating to the "building" of locomotive-miles or car-miles should be approached with the idea that this job is just as important as the building of a tank or a battleship, for many times in the days just ahead those tasks may be delayed for lack of materials that only a railroad can haul. No railroad officer can afford to take the attitude that it is the responsibility of anyone else but himself to get materials for his railroad.

Some railroad men seem to feel that having asked for materials, they have no further responsibility than to wait for them regardless of the fact that important work on equipment needed for service may be delayed. By so doing they are making a serious mistake.



Photo courtesy Maine Central

A Special Shipment of Large Marine Boilers Photographed on the Maine Central in the White Mountains near North Conway, N. H. The Entire Lot of 90 Boilers Is Being Moved in Regular Trains in Groups of Three From Schenectady, N. Y., to South Portland, Me., via a Circuitous Route

Rail Stress Measurements of Counterbalancing Effects*

A. A. R. tests on Chicago & North Western verify calculated stresses and dynamic augment—Value of cross balancing demonstrated

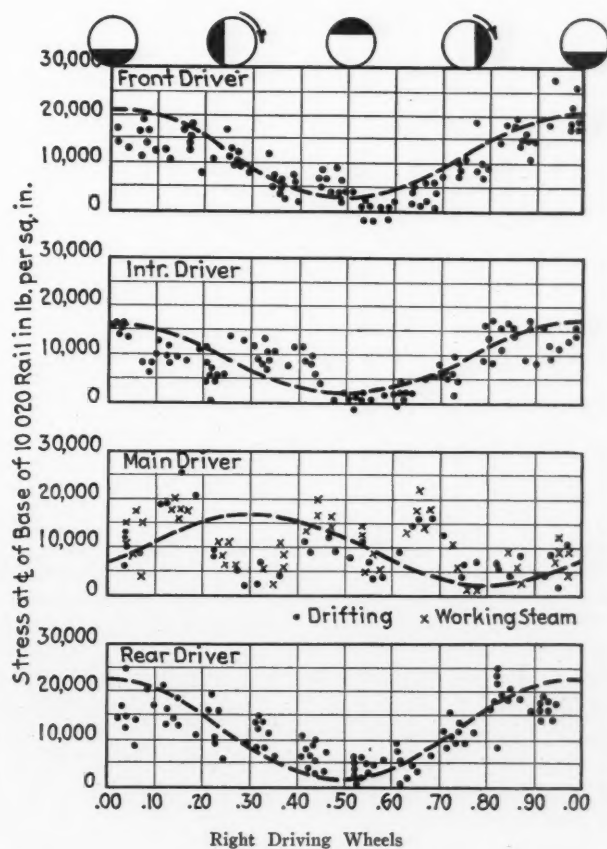
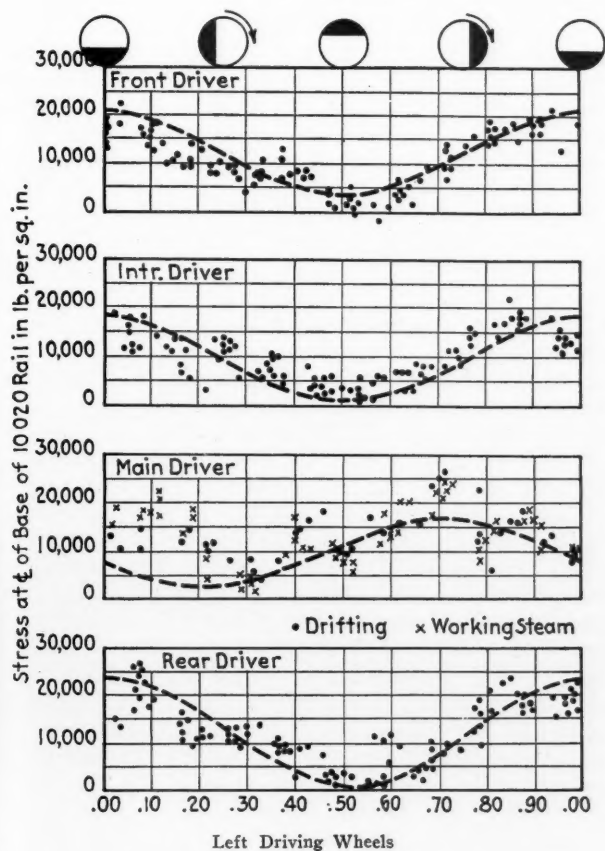
FROM December 27, 1940, to January 7, 1941, tests were carried out on the Chicago & North Western near Harvard, Ill., to determine the stresses in 100-lb. rail developed by a 2-8-2 type, Class J-S, locomotive, a recently rebalanced locomotive of the same class; a Class J-A locomotive of the same type remodeled some five years ago, and a recently rebalanced Class E-3 4-6-2 type locomotive. Test runs were made at various speeds up to the maximum attainable and rail stresses were measured by means of magnetic strain gages placed along the center line of the rail base under both sides of the locomotive. Slow motion pictures were taken in connection with the test runs to show the position of the counterweight as each driver passed over each strain gage.

The test measurements showed that the rebalancing of the 2-8-2 type, Class J-S, locomotive resulted in a very beneficial reduction in rail stresses and dynamic augment and that engines of this class so balanced may be operated without likelihood of rail damage on 100-lb. rail or heavier at speeds as high as the engine is capable of running. The tests also showed that the counterbalanc-

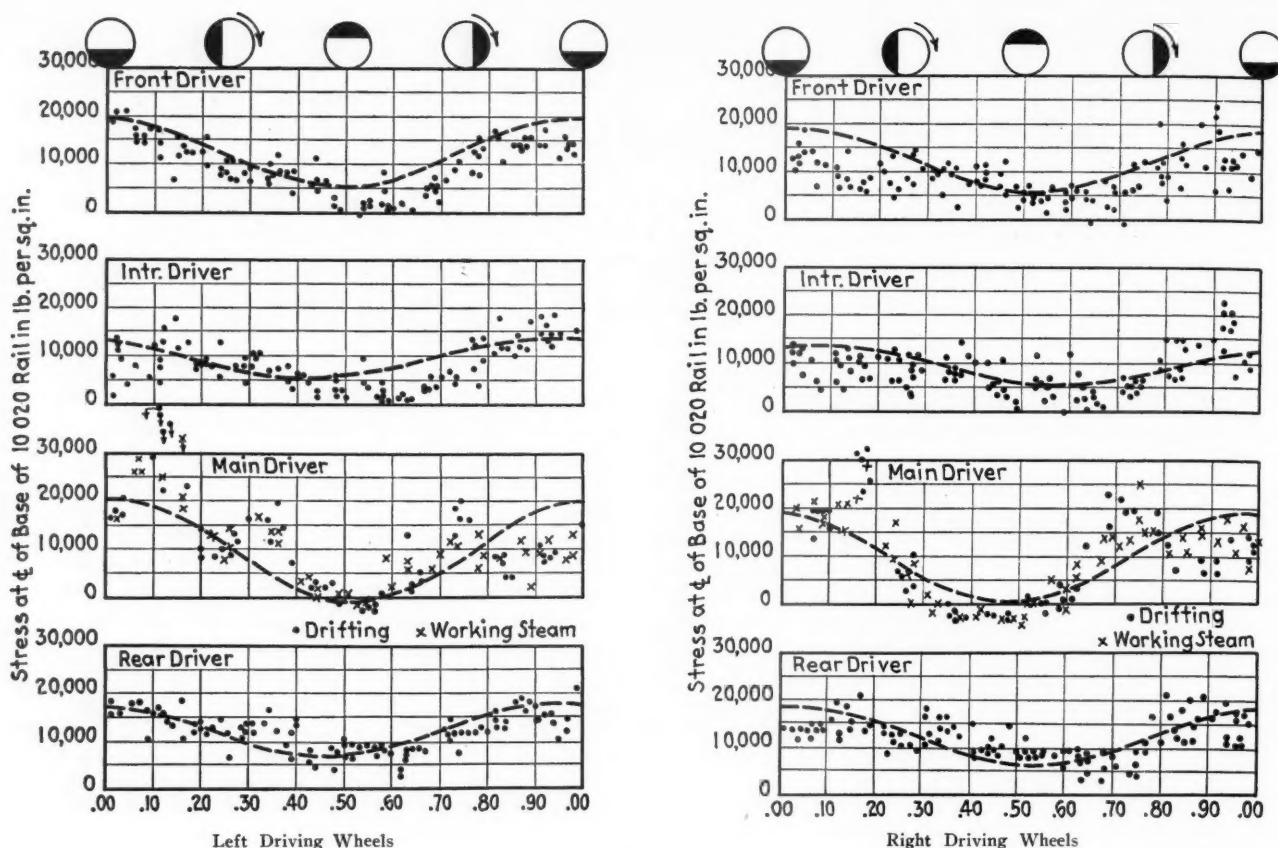
ing on the remodeled 2-8-2 type, Class J-A, locomotive could be improved by reduction of balance in the main driving wheels in accordance with the current practice of providing rotating balance for only seven-eighths instead of the full scale weight of the back end of the main rod. The stress measurements under the 4-6-2 type, Class E-3, locomotive were not excessive at the maximum speed of the tests, 90 m. p. h.

The C. & N. W. has approximately 300 of the Class J-S locomotives which were purchased some 20 years ago. These locomotives had 61-in. driving wheels. The construction standards in effect at that time were such that they have been limited to 50 miles an hour maximum speed in present-day freight service. During the past five years 38 of these locomotives have been remodeled for higher speed operation by increasing the steam pressure, applying Boxpok driving wheels with cross-counterbalanced main drivers, and increasing the driving-

* From the report of the tests conducted under the direction of the mechanical engineer of the Mechanical Division and the research engineer of the Engineering Division of the Association of American Railroads. The complete report is published by the Association.



Rail Stresses in Relation to Counterweight Positions—Locomotive No. 2597 at 65 M. P. H.



Rail Stresses in Relation to Counterweight Positions—Locomotive No. 2565 at 80 M. P. H.

wheel diameter to 64 in. These locomotives are called the J-A class.

The remodeling of the J into the J-A class cost approximately \$11,500 per engine. Recently one of the J-S locomotives, No. 2517, was experimentally rebalanced for higher speed operation at the nominal expense of \$350, of which amount \$250 was for replacement with lighter pistons.

How the Tests Were Conducted

The location of the tests was a single-track main line between Harvard, Ill., and Janesville, Wis., on which the tests were operated southbound, beginning at Sharon and ending at Harvard. Between these points there are approximately three miles of 0.6 per cent down grade available for accelerating the train followed by three miles of level track to a point beyond the test location, with $1\frac{1}{2}$ miles of up grade to assist in stopping.

Eleven magnetic strain gages were located on the longitudinal center line of the base of the rail between ties on each rail to measure the bending stress in the rail base parallel to the direction of its length. The gages were directly opposite each other on the east and west rails, except that it was necessary to lap over one gage to avoid placing it so near the joint that the stress measurements would be unduly influenced by the joint impacts.

It is known that rail stresses are influenced by the condition of track as well as by the locomotive loading and this is particularly true where a considerable amount of play may exist between the rail, tie plate, and tie at various places along the rail length. In order to remove as much of the track effect on stress variation as possible, metal shims were placed between the rail and tie plate over a length of 55 ties preceding, at and beyond, the strain gages to bring the rail to as nearly a perfect

surface as possible and also to eliminate play between the rail, tie plate, and tie. A profile of the rail surface was made for the track where the magnetic strain gages were placed. In addition, a so-called loaded rail profile was made by taking elevations on the rail over each successive tie with the rear driver of locomotive No. 2517 spotted directly over each tie at the time the elevation was taken. The rail levels so obtained represent, therefore, the actual profile that the locomotive rear driver would follow in passing over the track immediately at the gage locations.

Similar elevations were taken with one wheel of one of the passenger coaches used in the test train spotted over each individual tie. A comparison therefore, of the average rail depression under the comparatively light wheel load of the passenger coach with the rail depression under the much heavier driving-wheel load provides the means of determining the modulus of elasticity of rail support, u , which is used in the calculation of rail stresses, considering the rail as a continuous beam resting on an elastic support. The average difference in rail depression between the light and heavy wheel loads, as determined from the track levels, was 0.073 in. A modulus of rail support of 3,000 gives this difference between the calculated rail depressions for the light and heavy wheel loads. This value of the track modulus was used, therefore, in calculating the rail stresses which would be anticipated due to the locomotive wheel loads, spacing, and counterbalance condition for comparison with the measured stress values. This is rather a high value and may have been influenced to some extent by the low temperature prevailing, but the roadbed did not appear to be frozen to any considerable extent. It should also be noted that the modulus of elasticity of rail support does not have a very great effect upon the bending stresses except insofar as vibration phenomena may occur.

The magnetic strain gages, oscillographs, and electrical equipment required for making the stress measurements were made available to the Association of American Railroads by the Pennsylvania Railroad and, in addition, an operator for the equipment and other assistance was also provided by the Pennsylvania. The type of magnetic strain gage used in making the stress measurements is quite simple and reliable in operation. The gage itself consists of two members which are fastened to the rail by means of two screws at a gage length of $2\frac{1}{4}$ in. apart.

The Test Locomotives

In order to simulate service conditions more accurately and also to provide braking force for the locomotive, several passenger coaches and a caboose were used in conjunction with the locomotive in making the test runs.

The general characteristics and the counterbalance data of the locomotives tested are summarized in the table. Locomotive No. 2597 is one of the original class of Mikados built 20 years ago for slow-speed, heavy freight service. There is a heavy overbalance on the front, rear, and intermediate drivers. The main driver has a slight overbalance on a diameter through the crank pin with considerable out-of-balance at 90 deg. thereto due to the out-of-plane effect of the revolving weights. This locomotive had no eccentric crank.

Locomotive No. 2565 is one of those remodeled from the original J class. The cross-balancing was calculated by methods recognized as standard practice at the time the locomotive was remodeled and the scale weight of the back end of the main rod was used as its effective rotating weight. This is the reason the overbalance in the main drivers is so much in excess of that for the remaining drivers.

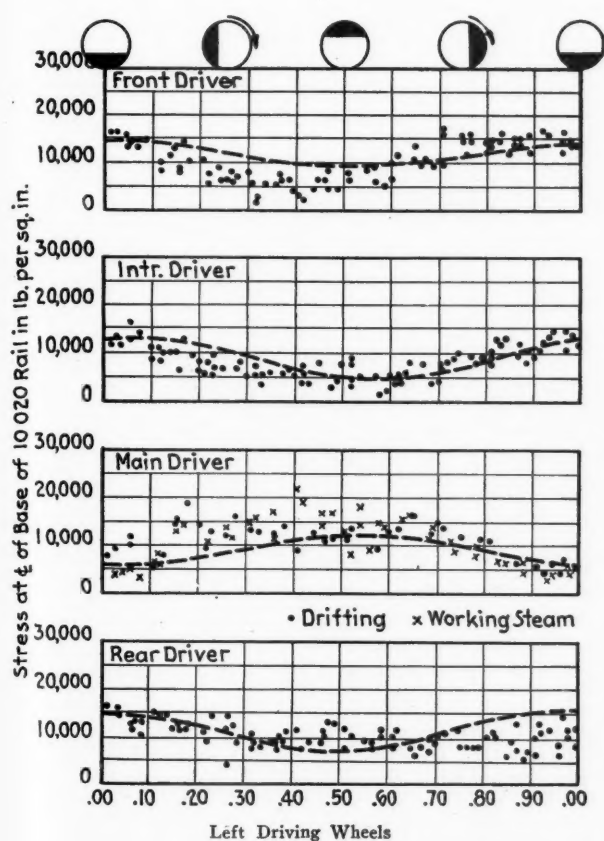
The reciprocating parts of the rebalanced locomotive,

No. 2517, had been lightened by 200 lb. and a considerable amount of reciprocating balance removed from the front, intermediate, and rear drivers. Instead of replacing the wheel centers with centers having the counterweight offset, the main drivers were given a partial cross-balance by drilling a large hole at the right-hand end of the counterweight and adding an auxiliary weight at the left-hand end.

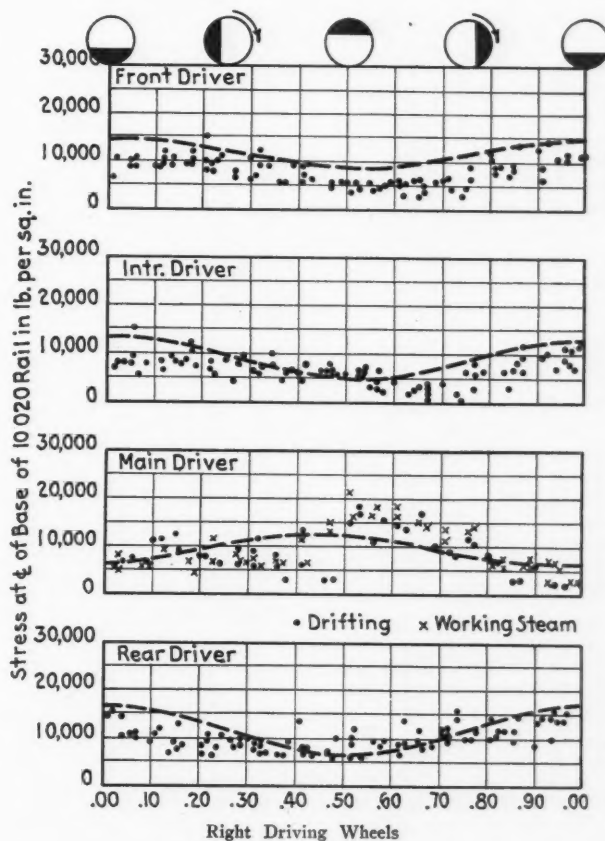
Locomotive No. 602 is a Pacific type which had been equipped with light rods and reciprocating weights and rebalanced for high-speed operation some time previous to the tests. No information from shop records was available on the balancing of this locomotive, and the figures given are in accordance with the instructions given to the shop prior to the rebalancing.

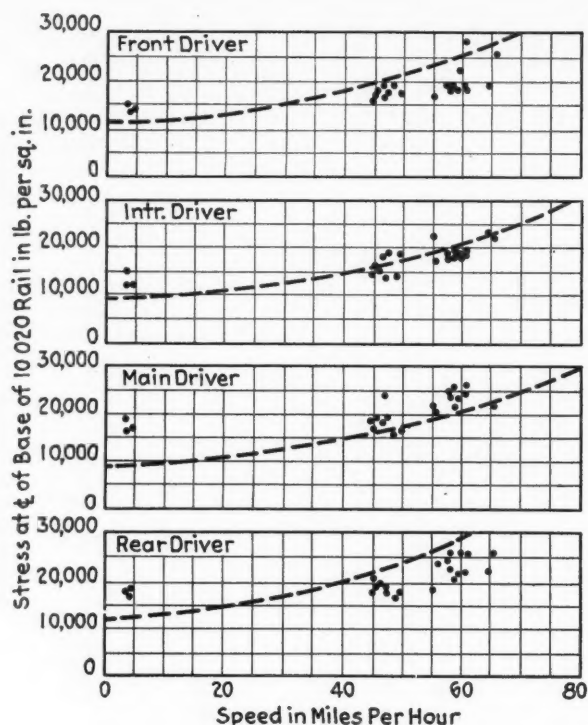
Test Measurements Compared with Calculated Stresses

Throughout the tests, photographs were taken by means of a high-speed camera and also a high-speed movie camera to determine the position of the counterweight as each driver passed each gage for every test run. In presenting the results obtained in the tests and, in particular, in so far as the individual effect of counterbalance is concerned, diagrams have been prepared showing the measured stress for each driving wheel at the various running speeds with respect to the position of counterweight through a complete revolution. In order that the measured stresses might be compared with calculated stresses, the stress at the base of rail has been calculated for each locomotive for the nominal axle loading and wheel spacing, to which has been added the stress due to the centrifugal force from the unbalanced counterweight at the speed of the test. The method used in making these calculations is that developed by the Special Committee on Stresses in Railroad Track and this



Rail Stresses in Relation to Counterweight Positions—Locomotive No. 2517 at 65 M. P. H.





The Maximum Recorded Rail Stresses in Relation to Speed Compared with Calculated Rail Stresses—Locomotive No. 2597

method is fully explained in various American Railway Engineering Association publications*. This analysis considers the rail as a continuous beam on an elastic support. The modulus of elasticity of rail support, u , was determined as previously explained and all other necessary factors to be known for the solution of the formula are given by the properties of the rail section and the modulus of elasticity of steel. This formula has been well substantiated by extensive field experiments, not only in this country, but also abroad.

The report contains diagrams showing the relationship between rail stress and counterbalance position for each of the locomotives and for each of the various speeds of test. On these diagrams the stress values calculated as previously explained are shown by dashed curved lines. Only selected diagrams at high speeds are shown here.

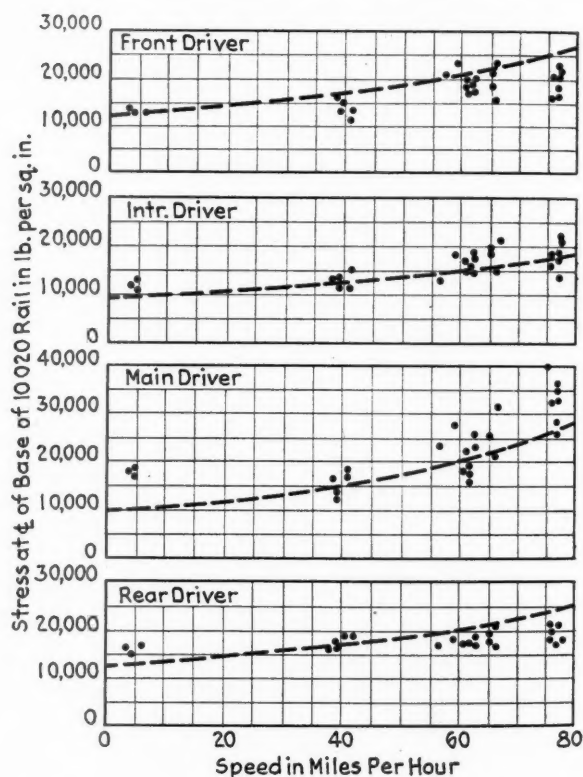
The calculated dynamic augment for locomotive No. 2597 is greatest on the rear driver, and at 65 m.p.h. is equal to 22,100 lb., or 76 per cent of the nominal wheel load. The effect of the counterweight on the rail stress is clearly indicated. Generally speaking, the measured stress values are in very good agreement with the calculated values. The outstanding difference is on the right and left main driver and it is quite apparent that there are disturbing forces acting on the main driver other than the counterweight.

On locomotive No. 2565 the counterweight effects are most pronounced at speeds of 80 m.p.h. For all drivers except the main the measured stresses are in reasonably good agreement with the calculated values. For the right and left main drivers, however, there is a quite definite indication of other disturbing forces than counterbalance and occasionally very high stress values were measured, particularly under the left main driver. As will be noted from the counterbalancing data, the overbalance on the main driver is considerably heavier than on the other drivers due to the method of balancing the

main rod. A considerable improvement in this locomotive could be effected by reducing the overbalance in the main drivers. It seems quite probable that occasional rail kinks may occur from this engine operated at speeds as high as 80 m.p.h., although no kinks were found during the tests. With this locomotive at 63 m.p.h., the stresses were not excessive, although it was apparent that an improvement could be effected in the main driver by reduction of the overbalance.

Two series of tests were conducted with locomotive No. 2517. In the first series the shims were in place as in the preceding tests to remove the variations in track irregularities and play between rail, tie plate, and tie. The track shims were then removed for the second series and the tests were repeated. There was no marked effect in the stress measurements from the shims.

The rail stresses shown with respect to counterweight position are for the series of tests with track shims in place. At the speed of 65 m.p.h. the stresses were quite moderate under all the driving wheels. There was little difference in the results obtained in the second series of tests with and without track shims, except that there was a wider variation or scatter of measured values in



The Maximum Recorded Rail Stresses in Relation to Speed Compared with Calculated Rail Stresses—Locomotive No. 2565

the series of tests with shims removed. The magnitudes of the measured stresses were quite low at the highest speeds of the test.

Track shims were not used in the tests on locomotive No. 602. At the maximum speed of the test, 90 m.p.h., the measured stresses were not excessive.

It has been the practice on the C. & N. W. to calculate the rail stress due to nominal wheel load and spacing, plus the dynamic augment from the overbalance in the counterweight; to increase this by a speed factor, and to restrict the speed of operation of the particular class of locomotive so the calculated rail stress as determined in this manner shall not exceed 30,000 lb. per sq. in. in

* See proceedings A. R. E. A., Vol. 35 (1934), page 278.

General Characteristics and Counterbalancing of the Locomotives Tested

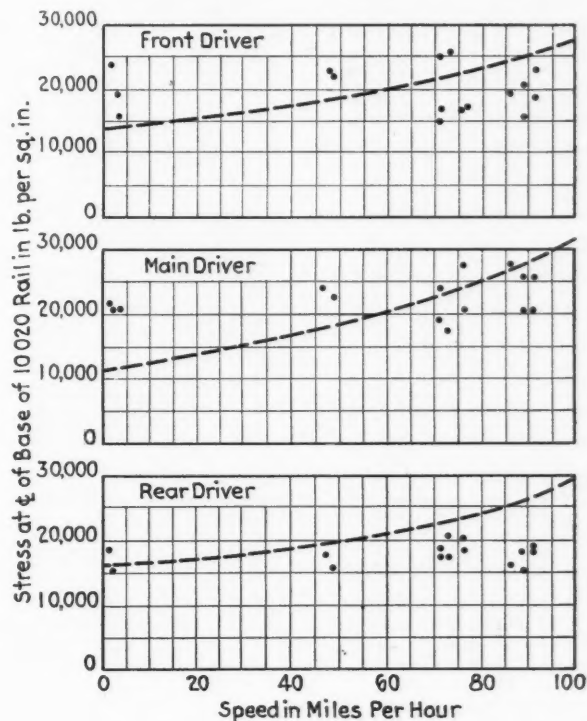
Type	2-8-2	2-8-2	2-8-2	4-6-2
Road class	J-S	J-A	J-S	E-3
	(original)	(rebuilt)	(rebalanced)	
Locomotive No.	2597	2565	2517	602
Weights in working order, lb.:				
On drivers	233,000	237,000	233,000	210,000
On front truck	29,000	29,000	29,000	72,000
On trailing truck	52,000	53,000	52,000	65,000
Total engine	314,000	319,000	314,000	347,000
Tender	175,400	184,000	175,400	301,100
Cylinders, diam. and stroke, in.	27 x 32	27 x 32	27 x 32	25 x 28
Driving-wheel diameter (outside tires), in.	61	64	61	75
Valve gear type	Young	Young	Young	Baker
Boiler pressure, lb. per sq. in.	185	200	185	260
Grate area, sq. ft.	63.1	63.1	63.1	70.3
Evaporative heating surface, total, sq. ft.	4,153.9	3,794.6	4,153.9	4,292.9
Superheater heating surface, sq. ft.	890.0	1,112.4	890.0	2,040.0
Rated tractive force, lb.	60,100	62,000	60,100	51,500
Rated tractive force with booster, lb.	64,600
Counterbalance data:				
Weight of reciprocating parts on one side, lb.	2,221	2,221	2,022	1,779
Overbalance, front driver, lb.:				
Right	370	361	178	201
Left	125	109	170	170
Opposite crank pin 90 deg. from crank pin*	-12	-12	-24	-24
Overbalance, intermediate driver, lb.:				
Right	349	377	171	178
Left	145	135
Opposite crank pin 90 deg. from crank pin*	-40	-40	-40	-44
Overbalance, main driver, lb.†:				
Right	57	84	278	299
Left	-40	-40	179	181
Opposite crank pin 90 deg. from crank pin*	-235	-235	17	20
Overbalance, rear driver, lb.:				
Right	369	390	183	172
Left	158	124	130	130
Opposite crank pin 90 deg. from crank pin*	-13	-13	-28	-28
Right	-18	-18	-21	-21

* The minus sign before these items indicates a deficiency of counterbalance for the out-of-plane dynamic effect of the revolving weights about the opposite crank pin.

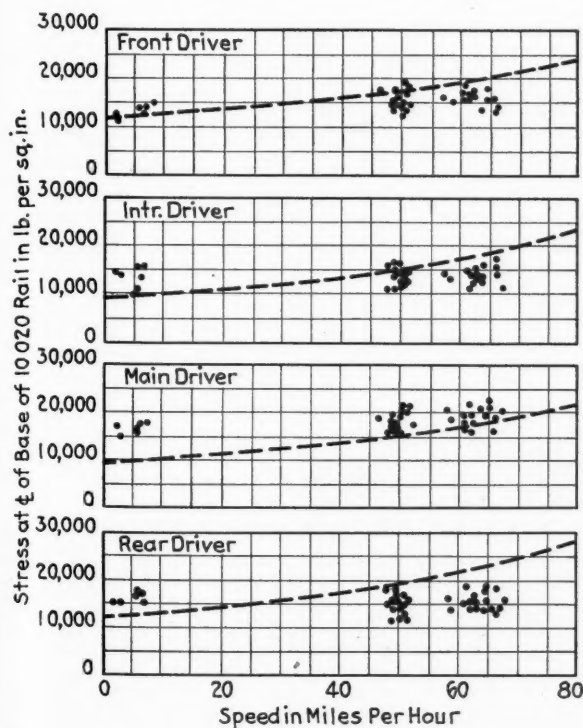
† Revolving weight of main rod on crank pin considered as seven eighths actual scale weight of the crank-pin end.

‡ The minus sign indicates a deficiency of rotating balance.

the base of the rail and the maximum calculated dynamic augment on any one wheel shall not exceed 50 per cent of the nominal wheel load. The elastic limit of rail steel varies from 50,000 to 70,000 lb. per sq. in., averaging approximately 60,000 lb. per sq. in. There are, however, a number of conditions which make it essential to allow a factor of safety of two, which explains the establish-



The Maximum Recorded Rail Stresses in Relation to Speed Compared with Calculated Rail Stresses—Locomotive No. 602—Rail Shims Removed



The Maximum Recorded Rail Stresses in Relation to Speed Compared with Calculated Rail Stresses—Locomotive No. 2517

ment of 30,000 lb. per sq. in., as the maximum permissible stress. The more important of these factors are: (a) lateral bending; (b) eccentric loading of the rail; (c) temperature stresses; (d) excess loading of one rail on curves; (e) reduced strength of rail by wear, particularly on curves; (f) occasional locations in track of inferior ties or other weakness in rail support; (g) out-of-round wheels or flat spots on wheels; (h) 18 to 20 per cent higher calculated stresses in head than in base of rail.

The speed factor in per cent is obtained by dividing 33 in. by the actual diameter of the wheel and multiplying by the speed in miles per hour. For a 66-in. diameter wheel a speed factor of $\frac{1}{2}$ per cent per mile an hour speed would be used, or for 100 m.p.h. the calculated stress due to static wheel load and dynamic augment would be increased 50 per cent.

Four of the graphs have been prepared to show a comparison of the maximum stresses measured for each driving-wheel position obtained on any one run with this calculated speed-stress curve above described. This is particularly interesting because it gives information showing with what assurance the rail stresses may be determined by calculation without expensive measurements, based only upon known locomotive data and the consist of the track structure.

It will be noted that the calculated curve fits fairly well the maximum measured stress values. These diagrams afford a particularly good comparison of the reduction in measured stresses at the higher speeds with the re-

(Continued on page 1072)

Many Outstanding Mark Southern



I—A Striking View of Cuts and Fills on the New Line, Showing the Method of Sloping and Berm Construction Employed

IN northern California, the Central Valley project of the federal government is requiring the relocation of 37 miles of the Southern Pacific's main line between San Francisco and Portland, Ore. This line change, which requires the construction of 30.1 miles of single-track railroad in mountainous country, is one of the most difficult and interesting pieces of railroad construction carried out in this country in many years, involving as it does approximately 5,780,000 cu. yd. of grading, 12 tunnels with an aggregate length of 19,070 ft., and the construction of 8 major bridge structures with a combined length of 13,044 ft.

The Central Valley Project

The Central Valley Project is a water conservation plan to redistribute the waters of the Sacramento River water shed and the San Joaquin river over the San Joaquin and Sacramento valleys of central and northern California. The primary purposes of the project are to furnish water for irrigation, power development and navigation, and for flood control. One very important result will be increasing the water supply of the San Joaquin valley for purpose of irrigation. Still another will be the so-called backing up of salt water encroachment from San Francisco bay. Industrial development on the upper reaches of San Francisco bay will likewise benefit by reason of the availability of fresh water, the need for which is urgent and expanding.

The general area of California included in the Central Valley project has a length of about 500 miles, a width of about 50 miles, and an area of approximately 58,150 sq. mi. On the east of this area are the Sierra Nevada mountains; on the west, or ocean, side, the Coast Range

mountains; on the south, the Tehachapi mountains, that form a cross connection between the Sierra Nevada and Coast ranges. The two most prominent peaks of the Sierra Nevada range are Mt. Shasta, which rises to an elevation of 14,161 ft., and Mt. Whitney, which towers to an elevation of 14,496 ft. Mt. Lassen is also important, with an elevation of 10,437 ft., and is, incidentally, not entirely dead as a volcano.

The Sacramento and the McCloud rivers, originating on the slopes of Mt. Shasta and related mountain ranges, and the Pit river, flowing from the high lands of the Sierra Nevada range further eastward, with tributaries from the easterly slope of the Mt. Lassen range, unite to form a greater Sacramento river, which flows generally south and then west to San Francisco Bay, and then to the ocean through the Golden Gate. From the slopes of the Sierras opposite Mt. Whitney, various other streams flow to the valley. The most prominent of these, and the one from which the lower valley takes its name, is the San Joaquin.

This river flows in a northerly direction, the reverse to that of the Sacramento, the two rivers joining to form the upper part of San Francisco bay. Above the bay they have created a vast delta region of fertile land, which is submerged at high water periods, or by high tides from the ocean.

By far the greatest flow of water into the upper part of San Francisco bay comes from the Sacramento and its tributaries, which, in addition to those mentioned previously, are the Feather, Yuba, Bear and American, with numerous streams of importance flowing out of the Coast range. The flow of water from the streams into the San Joaquin valley basin is deficient in volume to the extent that there is insufficient water to serve the lands that have been placed under cultivation. It should be understood that the main characteristic of stream flow of this entire territory is that of a large winter flow, with little flow during the long summer months; Hence, the need of conserving the winter water by storing it behind dams.

Dams to Impound Water

The basic concept of the Central Valley project involves the construction of sundry dams on the more important rivers; the construction of high-level canals cir-

* Abstracted from an address presented before the Western Society of Engineers, Chicago, on May 13. This abstract, covering the project as a whole, supplements an earlier article on the general features of the project, published in the *Railway Age* of June 22, 1940, and will be followed in subsequent issues by specific articles describing the grading and bridges involved in the line change.

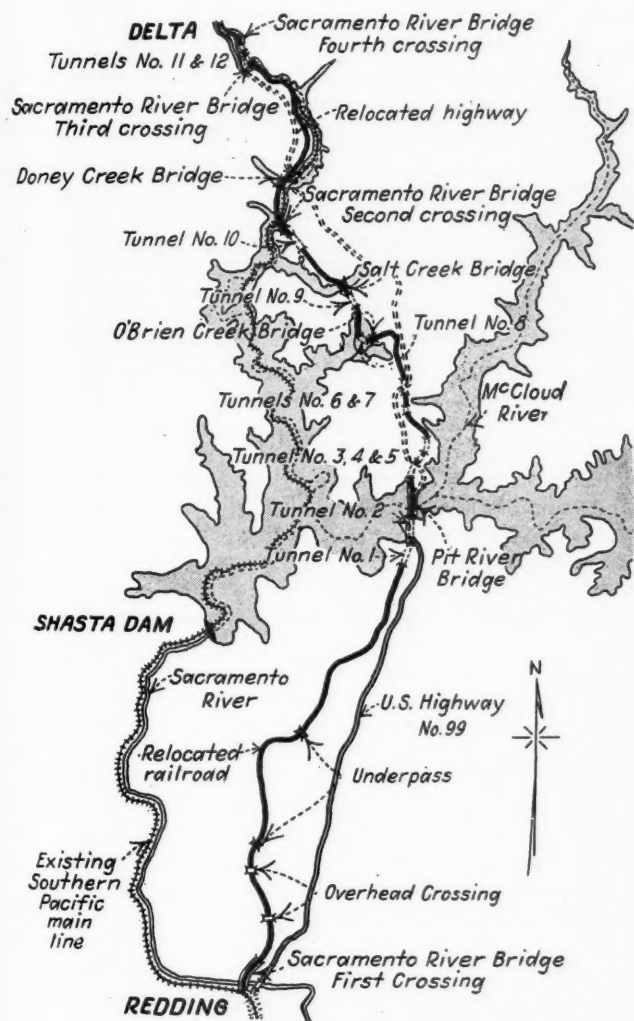
Features of Construction

Pacific Shasta Line Change*

30-mile diversion in northern California, involving heavy grading, 12 tunnels and 8 large bridges, is characterized by modern standards and methods

By W. H. Kirkbride

Chief Engineer, Southern Pacific, Pacific Lines

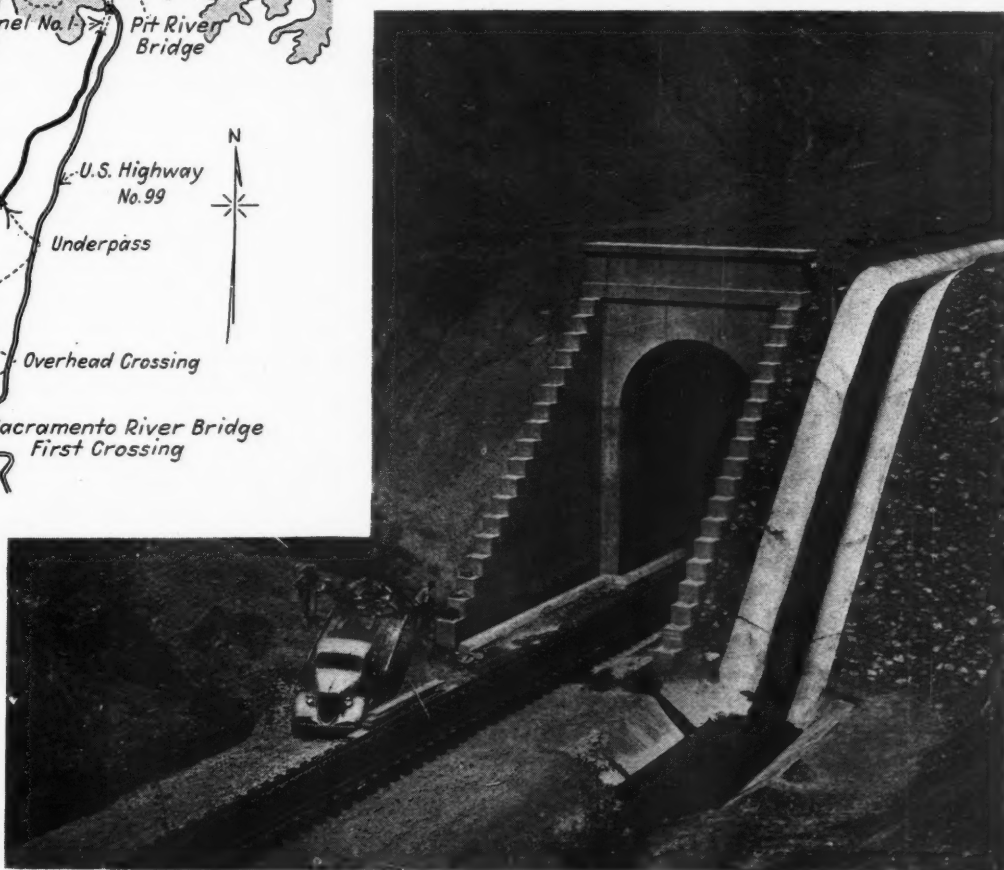


II — Above — Sketch Map of the Territory Involved in the Line Change, Showing Shasta Dam, the Reservoir Area, and the Old and New Railroad Locations

clinging the rim of the San Joaquin valley; the diversion of the San Joaquin river water to the south; the diversion of the Sacramento river water into the San Joaquin valley; the delivery of a constant flow of not less than 3,300 sec. ft. of water into the upper reaches of the Sacramento bay to prevent salt water encroachment from San Francisco bay; the development of power; and the maintenance of a greater depth of water in both the Sacramento and San Joaquin rivers.

It has been stated that the Sacramento flows more water than the San Joaquin. You will better understand the Sacramento as a water producer by a comparison with the "Mighty" Colorado. The Colorado, 2,000 miles long, produces an average annual flow of 16,000,000 acre

III—Below—The South Portal of Tunnel No. 7. Showing a Portion of the Flume Constructed to Take Care of a Difficult Overhead Water Situation

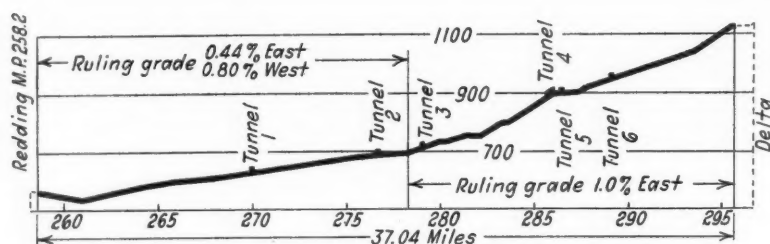
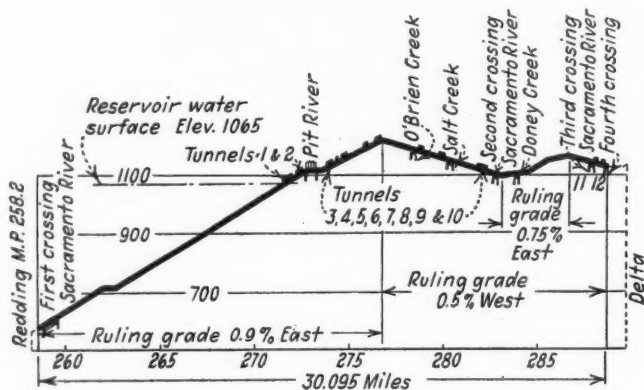


feet, whereas, the Sacramento only $\frac{1}{3}$ as long, produces 21,000,000 acre feet.

The present authorities from Congress for the Central Valley project provide for the construction of a dam, known as the Shasta dam, across the Sacramento river at a point about 14 miles upstream from Redding, Cal., and a short distance below the confluence of the Sacra-

mento, Pit and McCloud rivers, creating a large reservoir; a second dam, known as the Friant dam, across the San Joaquin river, 24 miles east of Fresno, Cal.; a canal, 160 miles in ultimate length, that will extend from the Friant dam, along the easterly rim of the San Joaquin valley, to and around Bakersfield, Cal.; a shorter canal, 40 miles in length, that will extend from the Friant dam, northward to the Chowchilla river, north of Madera, Cal.; and a third canal, 46 miles in length, known as the Contra Costa canal, that will extend from the lower reaches of the Sacramento and San Joaquin rivers, along the southerly shore of the Carquinez straits. The last mentioned canal will furnish water not only for domestic and irrigation purposes, but also for major industries.

The water to be stored by Shasta dam will be used, first, for power development, and thence, flowing down the river, will serve to irrigate the large Sacramento valley. The surplus water in the Sacramento will be pumped by a system of seven pump lifts up the San Joaquin valley to irrigate the lands formerly irrigated by the waters of the San Joaquin river, and to overcome the present deficiency of water in this valley. The surplus water still remaining in the upper Sacramento will



IV—Left Above—Profile of the New Line Between Redding, Cal., and Delta, Showing Tunnel and Bridge Locations. V—Left—Profile of the Existing Railroad Between Redding and Delta



VI—An Interior View of One of the Tunnels, With Lining Reinforcing in Place

be used to maintain a constant flow of at least 3,300 sec. ft. into San Francisco bay, which will prevent salt water damage to the fertile delta lands which extend from the bay to near Stockton, Cal., and the City of Sacramento. In addition to the advantages already cited, there will be a decided improvement in navigation conditions in the river.

Illustration II is a sketch map of the Shasta reservoir area, which shows the Shasta dam, the reservoir area above the dam, and the existing and proposed railroads and highways. The surface area of the proposed reservoir is 29,580 acres, and its capacity 4,500,000 acre feet. The water impounded by the dam will be backed up the Sacramento to Delta, Cal., on the railroad, a distance of 26 miles; similarly, up the McCloud river a distance of 24 miles, and along the Pit, a distance of 35 miles.

The Shasta dam, now under construction, is a slightly arched gravity-type concrete structure, with a sluiced rock fill at the upper east abutment, and, as previously stated, is located across the Sacramento river about 14 miles above Redding. It has a maximum height of 560 ft.; a crest length of 3,500 ft.; a base thickness of 580 ft.; and a top thickness of 37 ft., carrying a roadway. The top elevation of the dam is 1,077 ft. and the spillway, 375 ft. long, is the highest overflow spillway in the world.

Old Line to Be Inundated

The construction of Shasta dam called for the construction of a new high-level railroad approximately 30 miles in length, extending from Redding, to Delta, to replace approximately 37 miles of existing railroad. About 14 miles of the existing line north from Redding, to the dam site, will remain in place, at least for many years, for the purpose of handling machinery and sup-



VII—The Doney Creek Bridge Is a Three-Span Structure, With Continuous Deck Trusses, Each Span Being 192 Ft. 6 In. Long

plies to the dam, for service to future construction projects, and to afford transportation service for the mines that will continue to be operated in this territory.

The section of railroad that is to be abandoned was constructed in the early Eighties. It is located in the obvious economical location along the bottom of the Sacramento River canyon, conforming to the water grade of the river. Generally, it follows the west bank, although four bridges and seven tunnels were required in the 37 miles between Redding and Delta. The roadbed was established as near the river as flood water elevations would permit, so that the bridges were short and of simple construction; likewise, the tunnels were relatively short. In general, bedrock was exposed along the line, resulting in substantial roadbed construction.

Illustration V shows the profile of the existing line. Starting out from Redding on a section of 0.8 per cent grade descending northward, to Middle Creek, the gradient changes to a 0.44 per cent ascending ruling grade to Pit, a distance of 20 miles. From here, the grade becomes steeper, extending to Delta, the ruling grade in this last distance of 17 miles being 1.0 per cent.

With the submerging of a long section of the existing line, as shown in Illustration II it was obvious that a new location for the railroad had to be found at a safe height above the reservoir. Only two general locations were available, one on the west side of the canyon, and the other on the east side. In either case, preliminary studies showed that the relocated line must start at Redding to secure the required distance in which to obtain the higher elevation without exceeding existing ruling grades.

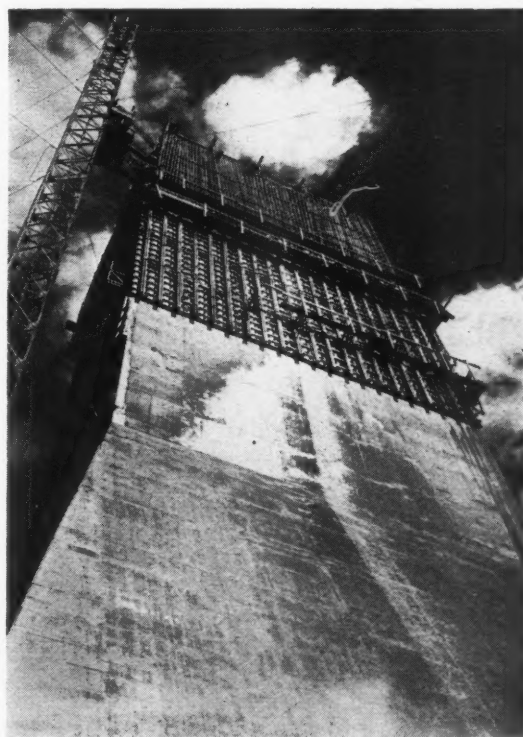
Illustration IV shows the profile that was actually obtained for the east-side line. From this it will be noted that a continuous supporting grade was necessary from Redding to the Pit river in order to clear the reservoir water at the height desired. The ruling grade in this distance of 14 miles is 0.9 per cent; then follows a stretch of 0.4 per cent grade over the Pit River bridge. It was

necessary to continue to ascend for a distance of 3.4 miles on a gradient of 0.74 per cent to obtain the controlling summit elevation of 1208 at Tunnel 7; the subgrade at this point being 143 ft. above reservoir level. Following this, a descending grade of 0.5 per cent extends for a distance of 6.5 miles to a crossing of the Sacramento river. The terrain northward then makes necessary 3.5 miles of 0.75 per cent ascending grade, and thence a descending grade of 0.5 per cent for a distance of 2.1 miles to a connection with the constructed line near Delta. The ruling grades resulting are 0.9 northbound and 0.5 southbound, with maximum curvature of 4 deg. Sidings and tunnels have grades compensated by flattening.

West-Side Line Rejected

When the line change around the reservoir was first officially reported upon to President Hoover by the army engineers, a preliminary survey was made on the west side of the river, and was recommended. However, I was not able to concur in this recommendation and did not accept the line by reason of our intimate knowledge of the situation that prevails on the west side of the river as to terrain, runoff and unstable hillsides, the latter being due to the fact that vegetation over a large part of the area had been killed by smelter smoke from copper mines that had operated in this territory.

The California state engineer was handling the project at that time and our various conferences on the problem resulted in the railroad taking a contract to make a close preliminary survey for a line on the east side of the river. This finally resulted in the railroad location as now being built. The unsatisfactory conditions mentioned with regard to the proposed west-side line did not exist on the east side. Here, with the line located practically on the tops of the ridges, the water problem, due to torrential storms which are characteristic in this territory, became a problem of easy control. On the other hand, there was the very forbidding problem of crossing the Pit river



VIII—This Pier of the Pit River Bridge Is 358 Ft. High, and 90 Ft. by 95 Ft. Square at the Base

arm of the new reservoir, and there were other bridge crossings to make over the upper Sacramento arm of the reservoir. Two viaducts over minor arms of the reservoir were also necessary. Furthermore, the crossing of the Sacramento and bottom lands at the start of the line, at Redding, was no small job.

The Pit river crossing was made possible when study developed that it was desirable, and practically neces-

nel beneath the site of the west abutment of the dam. This tunnel, 1821 ft. in length, was holed through solid rock (classed as Copley meta andesite), a safe distance below the cut to be excavated for the dam foundation, and thus, throughout the period of the new line construction, has permitted normal train operation without holding up work on the dam. After railroad operation has been transferred to the new line, the tunnel will be used as a by-pass for the water of the Sacramento during a certain stage in the dam construction.

Grading and Culvert Work

Constructing of the new line for the first 13 miles out of Redding was easy going for a mountain country, although there were fills 75 ft. high and cuts as deep. In the next mile there are two tunnels, each about $\frac{1}{2}$ mile in length; then the high bridge spanning the Pit River canyon.

Heavy work was then encountered, involving tunnels and extremely high rock cuts and fills on steep slopes; some fills extending into the reservoir water, which required special consideration and involved sluiced-rock construction. This section of unusual conditions terminates at a crossing of the Sacramento river. Beyond this point the line follows the west bank of the river for several miles, with shallow fills and cuts. Then, a more difficult terrain is encountered, involving two tunnels and two river crossings, which is characterized by difficult sidehill grading and conflict with the operated line.

The total grading on the relocated line will amount to 5,780,000 cu. yd., an average of 192,660 cu. yd. per mile; the unit average cost being approximately 32 cents, from a low of 19 cents to a high of 36 cents, not including tunnel excavation and approach cuts. Total tunnel excavation was 400,350 cu. yd., at an average cost of \$5.45. Approach cut excavation cost as high as 95 cents. Tractor rooters were used successfully to break up shale and rock.

Excavated material was transported by scraper carryalls and was deposited and compacted in the fills in horizontal layers. These carryalls ranged in capacity from 12 to 20 cu. yd. at the start of the job, to 25 and 30 cu. yd. later on as new equipment was purchased. Crawler shovels, both electric and Diesel-powered, and trucks of 12 to 25 cu. yd. capacity, were used for rock work. Where powder was used, the drilling was done by air-operated wagon drills. Generally, cut slopes were established 1 to 1, but many cuts were sloped $1\frac{1}{2}$ to 1, as the nature of material and dip of strata made necessary. All fills were compacted, and when I say compacted, I mean compacted, because the Reclamation engineers in charge of the work were experts at this, with much previous experience, and carried out the work in a most scientific and conscientious manner.

12 Tunnels

Tunnel construction is always interesting; I presume by reason of the unknown and unseen condition always ahead. Geologically, there are always many surprises, and water or no water is known only after the heading is holed through. The problem of future maintenance is one that must be dealt with, and is not very well understood by many. Under my supervision, there are 237,377 lin. ft., or 45 miles, of tunnels to be maintained on the Southern Pacific; and varied, indeed, are our experiences. For example, we were engaged in concreting a certain tunnel on April 17, 1906, when the so-called San Francisco earthquake occurred. The San Andreas



IX—The New Rail, Distributed Alongside by Trucks, Was Set in Place by a Burro Crane

sary, for the relocated state highway to cross the Pit river arm of the reservoir, which led highway and railroad engineers to get together on a joint crossing. The east-side line also presented a more favorable location than the west-side line with respect to tunnels, notwithstanding the knowledge that 12 tunnels, aggregating 19,070 ft. in length, would be necessary, as the individual tunnels would be shorter (an important matter in operating over a single-track ruling mountain grade) and the combined length much less.

An agreement was consummated between the United States Reclamation Service and the Southern Pacific, whereby the Federal agency was to construct a railroad upon the surveyed location, conforming to the plans and standards of the railroad and acceptable to its chief engineer, following the completion of which, the new road was to become the property of the railroad. In turn, the railroad was to surrender all right and title to the existing railroad between a point near Redding and a point near Delta, approximately 37 miles.

Plans and specifications having been prepared and accepted in detail by both parties, the reclamation engineers proceeded to let contracts for the various portions of the work in the order of their importance and conforming to an orderly sequence of performance. Recognizing that several years would be required to construct the new railroad, during which time the existing line must remain in service without interfering with the progress of the dam construction, one of the first steps in the line change project was the building of a line diversion tun-

fault passed through this tunnel, and with the quake, it was cut in two and the two halves shifted with respect to the center line. Smoke and gas conditions prevail in some tunnels and not in others. Locomotive drivers slip in tunnels more than outside; rail and fastenings corrode and track maintenance is excessive. Knowing of these conditions, the following principles of control were incorporated in the Shasta line change tunnels:

(1)—The avoidance of a crossing of a known and active fault line; (2) flatten or compensate the grade line; (3) avoid excessive length; (4) take care of water; (5) establish a good subgrade; and (6) provide greater sectional area if unfavorable gas and smoke conditions are expected to exist.

Twelve tunnels, with a combined length of 19,070 ft., have been necessary on the new line. The shortest tunnel is No. 6, which is 745 ft. long; the longest are No. 1 and 2, 2,719 and 2,691 ft., respectively. The width of tunnels between sidewalls is 17 ft. on tangent and 18 ft. on curves. The height above top of rail is 22 ft. 6 in., except that those tunnels more than 1,700 ft. in length were made 24 ft. high for reasons stated previously.

Tunnel No. 2 was made 1 ft. wider than the other tunnels to permit the construction of a gauntlet track through it. This gauntlet track has a turnout connection with the main track at the south end of the tunnel and joins with a second track or siding north of the tunnel, on the Pit River bridge, no switch being employed at the north end of the tunnel. This arrangement was adopted because it was considered extremely hazardous to locate a switch for the bridge siding in the short space between the tunnel's north portal and the bridge, as a derailed locomotive or car would be deflected by the turnout rails directly into the end post of the bridge truss.

The construction methods employed by the four contractors on the tunnel work were quite similar. In 10 of the tunnels, a complete upper heading was carried through from face to face before the lower bench was removed. In Tunnels No. 1 and 2, on the other hand, which were holed through hard rock, full-face excavation methods were used, except in the first breaking underground at the portals to firm rock. Steel H-beam plumb posts, wall plates and arch ribs were used throughout the tunnels, the posts and ribs being spaced on varying centers, depending upon ground conditions. All of the tunnels were lined with reinforced concrete, on concrete footings and curbs, the lining reinforcing being spaced 12 in. vertically and 18 in. horizontally.

Steel forms were used in the lining work and the concrete in the side walls and arches was placed by pneumatic guns. The concrete in the footings and curbs, on the other hand, was poured into place. The thickness of the concrete lining in the various tunnels varies from 6 in. in Tunnel 1 to 27 in. in certain of the other tunnels, the average thickness being about 12 in.

Eight Bridges

There are eight bridges on the relocated line, supporting approximately 2½ miles of track. Four across the Sacramento, one the Pit, and three are over tributaries of the Sacramento; all carry the railroad over reservoir waters except the First crossing of the Sacramento, at Redding, which is the longest, being 4,350 ft. long, with a maximum height of 101 ft. The length and height of the other seven bridges are as follows:

Pit crossing	3,588 ft.; Max. height 500 ft.
O'Brien Creek	1,028 ft.; Max. height 181 ft.
Salt Creek	1,391 ft.; Max. height 167 ft.
2nd crossing	1,040 ft.; Max. height 206 ft.
Doney creek	581 ft.; Max. height 160 ft.

3rd crossing	758 ft.; Max. height 100 ft.
4th crossing	308 ft.; Max. height 67 ft.
Total length—13,044 ft.	
Equal to 2.47 miles	

The Pit River bridge, with a double deck and height of 500 ft. above low water, is the most outstanding of the bridge structures on the new line. The maximum length of the bridge at the top, or highway level, is 3,588 ft. However, its length at the railroad level is 2,758 ft., shorter because at the north end the railroad deflects to the west on a massive sluiced rock fill roadbed, while the highway swings to the east of the railroad on a series of four approach girder spans. The bridge proper involves a center cantilever span 630 ft. long, flanked by 497-ft. anchor spans. The other spans in the bridge include three approximately 280 ft. long and two approximately 140 ft. long.

Piers 3 and 4 are the largest and about the same size. Pier 4 is 358 ft. high, 90 ft. by 95 ft. square at the base, and 15 ft. by 48 ft. square at the bridge seat. This and the other piers were designed earthquake resisting by a new formula, which takes into consideration the fact that they will be surrounded by water on all four sides. Shaking table experiments and accelerograms of actual earthquakes were used, instead of an assumption of a fixed percentage of gravity. Water uplift on the piers was also taken into account.

Sluiced Rock Fill

One of the outstanding features of the Pit River bridge is the sluiced rock fill which forms the north railroad approach to the bridge. At this end of the bridge a peculiar problem between the highway and railroad presented itself. The railroad location carries the line to the west through massive rock cuts, while the highway location, by reason of control points as to grade further north, deflects to the east, thus passing over and away from the railroad while still on the bridge. It was desirable to carry the railroad embankment out into the reservoir area a considerable distance to the south of the highway abutment, the top of which was about 60 ft. above the railroad grade.

To do this called for a fill surrounded on three sides by water. A natural shelf of the hillside, together with the availability of suitable rock, led to the decision to make a sluiced rock fill. This fall, constructed of large rock and fines, was built up in five-foot layers, the fines being sluiced into the voids under high hose pressure. The original material on the site of the fill was deeply trenched to secure anchorage for the rock. The slopes provided are 1¾ to 1. At the fillet contacts of the fill with the hillsides, concrete grout was poured into the rip-rap for a distance and depth of 10 ft., and drains were placed where necessary.

Track Laying

The agreement between the Bureau of Reclamation and the railroad provided that the railroad, with its own track laying equipment and experienced forces, lay and ballast the track, construct telegraph, telephone and signal lines, and install signal and centralized traffic control systems. The track-laying program was organized to follow up the completed grade from both the south and north ends, on the premises of being able to deliver the bridge steel and equipment to the various bridges for progressive erection, the last, in order, being the Pit River crossing.

Under the procedure adopted, a material yard was

established at Redding for the work at the south end and a similar yard was established at Smithson for the work at the north end. Later, other yards were provided as the rail heads advanced.

The sequence of distributing the track materials has been as follows: The rails were hauled out on the new grade in trucks and were placed on the shoulder of the subgrade, well toward the outside, both rails being placed on the same side, except in tunnels. Next followed the ties, which were handled by rope slings in bundles of 12, there being two bundles to each rail length. The ties were placed on top of the rails and at right angles to them. Angle bars were distributed, a pair to each rail end, and joint plates were placed with the angle bars. Intermediately following, tie plates were unloaded in convenient piles on the side of the roadbed opposite the rail, along with spikes, bolts and anti-creepers.

This method of distribution left a sufficient width of roadway in the center of the roadbed, both on the fills and through cuts, to permit the operation of trucks and automobiles. In tunnels, a different method of distribution has been necessary; the rails were laid on top of the concrete curbs and the ties and other track materials were handled by hand and placed next to the walls of the tunnels. This, again, allowed a driveway through the tunnels.

Whenever it was decided to lay track between any two points, such as between isolated bridges, a Burro crane, and an air compressor for furnishing air for pneumatic spikers and a bolting machine, were hauled to the point desired by trucks. A gang of men, with tie tongs, preceded the Burro crane and placed the ties on the subgrade in their proper position. Following them, another gang placed the tie plates on the ties, or on the gage plates provided on all ties on curves. Other men hung the angle bars on the rails with one bolt. The Burro crane then laid the rails on the tie plates and was followed by men bolting. These men tightened one bolt with hand wrenches and placed the other three bolts finger tight. Gagers then followed, spiking four ties per rail length to exact gage, by hand, and following them were other men, with short-handle hammers, setting spikes and tapping them down about $\frac{1}{2}$ in. into the ties. Next came the air compressor and men with pneumatic spiking hammers, who drove these spikes into place, and then followed two other men with a pneumatic bolting machine, who set up the bolts in the angle bars. Other men followed, applying anti-creepers and tightening the bolts on the gage plates.

All material for main track switches, including switch ties, was laid as the gang came to switch locations, such material having been distributed previously on the grade by trucks. Switches which were not necessary for work-train operation were spiked, while others, which had to be used by the work-train, were equipped with switch stands, pending the time when power-operated switch machines would be installed in connection with the centralized traffic control system. Prior to laying the new rail, all rail ends were chamfered with a file, and just ahead of track laying, the rail ends and angle bars were greased.

Ballasting

The ballast for the track was hauled in by work train from a slag pit at Kennet, Cal. For the first two lifts, the track was raised with a power jack and the ballast was shovel tamped. The first raise was approximately 5 in., and after permitting considerable work-train traffic, a second raise of 3 or 4 in. was made, bringing the track to the top of the rail stakes. Following further work-

train traffic, which usually caused the track to settle from 1 to $1\frac{1}{2}$ in., a final raise was made with hand-operated jacks and pneumatic tie tampers. Then, the gang shaped the ballast and subgrade shoulders to exact standard.

In tunnels, portable electric lighting outfits were used to furnish illumination for track work and for unloading work trains. The portable plant was placed on the end of one of the ballast cars and lights were strung along the sides of the cars in the train. On the bridges, the track work was done by the different contractors, who installed the decks and laid the rail.

When a few miles of the new rail had been laid on the grade from each end, the railroad work was picketed by outside labor organizations, and operations stopped. This resulted in the railroad being relieved of its contractual obligation to lay and ballast the track. In time the work was resumed by a contractor and, under railroad engineering supervision, is being completed substantially in the manner which has been described. Contractors are now also constructing telegraph and signal pole lines, stringing wires and installing the C. T. C. system.

The preparation of all plans and specifications for the work described, and general direction over it, is under S. O. Harper, chief engineer of the Bureau of Reclamation. The work was commenced under the late R. F. Walter, chief engineer of the Bureau. The Bureau's engineers on the Pacific Coast, who are actually carrying out the work are Ralph Lowry, construction engineer for the Shasta dam and railroad relocation; R. M. Snell, in direct charge of the railroad construction; and C. M. Jackson, chief inspector, assisted in soil stabilization work by H. M. Crowell. W. R. Young was supervising engineer for the Central Valley project up to the time of assuming the position of assistant chief engineer of the Bureau, at Denver.

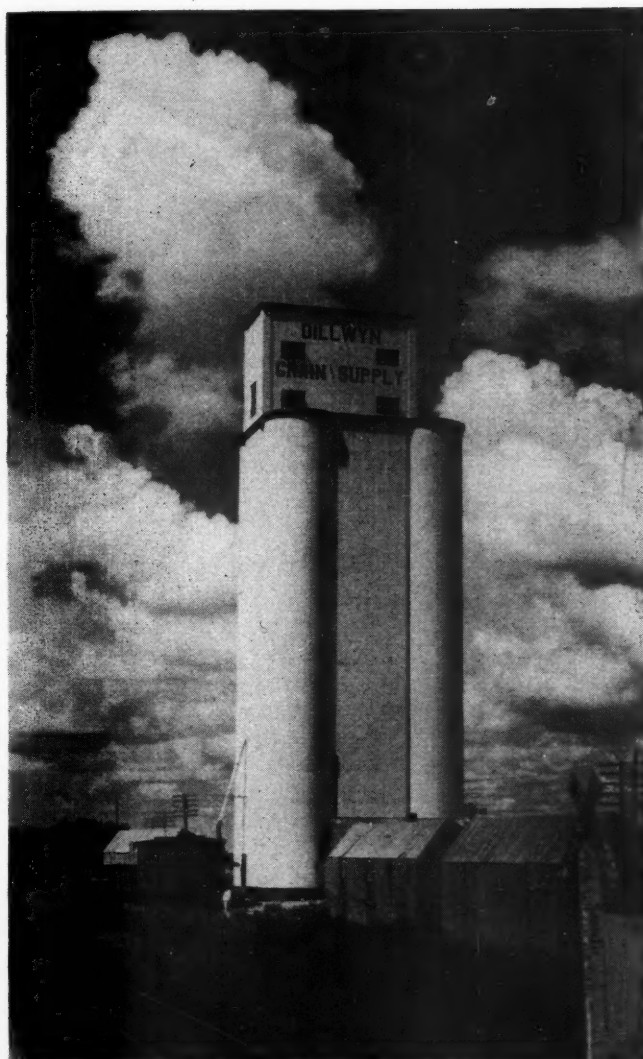
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Johns Hopkins Confers Degree on Daniel Willard

President Isaiah Bowman of Johns Hopkins University, Baltimore, Md., conferred the honorary degree of Doctor of Laws on the Baltimore & Ohio chairman on June 3. Mr. Willard has been a member of the board of trustees of the university since 1914 and president of the board since 1926. The list of men and women who have been so honored by Johns Hopkins is "relatively small," as was pointed out in the course of the presentation.

Railways Prepared for Wheat Crop



Courtesy A. T. & S. F.

The Country Elevator is the Crux of the Wheat Movement as Storage Space Becomes Scarce

THROUGH the use of extraordinary measures in getting empties back to the wheat-loading lines and by complete co-operation among themselves, the railways are in readiness to handle the winter wheat crop, which, according to all estimates, will be unusually large this year. The first carload of new winter wheat arrived in Kansas City on June 3, but the harvest has been delayed this year because of wet weather and the rush is not expected to begin until about June 15. As of June 8, the seven principal railways in the Texas, Oklahoma and Kansas territory involved had more than 21,000 box cars on storage tracks immediately available for use and an increase to about 25,000 available box cars was expected by June 15. Since May 1, more than 29,000 box cars have been returned to the home roads in the West by the eastern and southern carriers.

To accomplish this result, a series of extraordinary measures has been necessary. By means of a large number of meetings of various sorts, but all bearing on the

Lack of elevator storage will be limiting factor rather than any breakdown in transportation

general subject of handling the wheat movement; by the issuance of special orders by the Car Service division; and by co-operation between railways, it has been possible to make adequate preparations for the gigantic task of moving the wheat. However, as has been brought out in a series of joint meetings of railways, shippers, grain elevator men and representatives of government agencies, the problem this year is not so much one of adequate transportation facilities as it is of adequate space where the wheat may be stored after it is harvested.

Elevators Unusually Crowded

The Commodity Credit Corporation has under its control more wheat by far than any other single agency ever attempted to handle. In the seven-state winter wheat area alone, it has 120,000,000 bushels under loan, of which 20 to 22 millions are in farm storage and the balance in elevators. The estimated total for the entire wheat territory is 185 million bushels. This represents grain held under the government loan plan and consists of a sizeable percentage of the 1940 crop. The farmers to whom loans were made had the privilege of redeeming their wheat up to May 10, 1941, and, as a result, the government could not take title to this grain until that date and had to keep it in storage in the terminal and sub-terminal elevators through the winter. Even after the wheat was released, the cumbersome paper work required by the government in the operations of the C. C. C. has delayed shipments badly.

The C. C. C. is now endeavoring to move 40 million bushels of this wheat; 15 million bushels to Gulf ports and 25 million to the eastern seaboard. When, however, it is considered that warehouse receipts were issued by the government for as little as two bushels, and it is necessary to find, classify and assemble an average of about 20 warehouse receipts per car shipped, some idea of the magnitude of the task before the C. C. C. may be obtained. Further, all such receipts must clear through the Federal Reserve bank, an added complication and, as a matter of fact, the last of the warehouse receipts on the wheat released on May 10 were not cleared and delivered to the C. C. C. until the afternoon of June 3. This has delayed shipping the grain which is now cluttering up the mid-western elevators.

What the Situation Is

The meeting of the Trans-Missouri-Kansas Shippers Board at Wichita, Kan., on June 4, concerned itself largely with the wheat movement. At this meeting, a

spokesman for the grain trade, Frank Theis, president of the Simonds-Shields-Theis Grain Company, Kansas City, Mo., described the current situation.

The Kansas territory elevators on May 10, Mr. Theis said, had vacant space for 72,800,000 bushels, out of a total capacity of 166,000,000 bushels. As of Saturday, May 31, there was space for 77,858,000 bushels available, a gain of more than 5 million bushels. That gain, however, was mostly at country elevators, the terminal and sub-terminal elevators showing only 656,000 bushels increased space. The net result is that the terminal and sub-terminal elevators are about 42 per cent vacant and the country elevators 57 per cent.

Mr. Theis quoted the last available statistics as follows:

Elevators at:	Per Cent Vacant
Atchison	54
Dodge City	57
Hutchinson	54
Leavenworth	61
St. Joseph	46
Salina	61
Topeka	37
Wellington	64
Wichita	62
Kansas City	30

He described the Kansas City situation as unique for this time of year, pointing out that, as of March 24, the elevators there had 17 million bushels of vacant space as against 19 million now. However, the Kansas City Terminal has lost 865,000 bushels of space since May 10. Mr. Theis stated further:

"The Commodity Credit Corporation has taken over between 85 and 90 million bushels of wheat in Kansas City alone. Of this, 14 millions is destined eventually to move to Gulf ports, 13 million to the Central States area, and between 10 and 25 millions (nobody knows which) to the eastern seaboard. The entire plan and mechanics for handling this wheat needs revamping. It is cumbersome and unwieldy, and, if continued, will result in a breakdown of the whole structure."

Referring specifically to the "bottle-neck" storage situation existing in Kansas City, Mr. Theis said that, a few days before, the movement of about 3½ million bushels of wheat from Kansas City to the eastern seaboard had begun, after about 15 days delay owing to the cumbersome methods imposed on the C. C. C. by the government. He cautioned the grain men not to expect the railways to move or the elevators to handle and store the entire 1941 crop at once. He stated that much new storage space was under construction to be available July 1, and emphasized the need for greater farm storage. "There is nothing to get panicky about," he concluded, "in storing wheat on the ground. At least one of Kansas' most successful growers habitually stores a large portion of his crop on the ground, with no bad results whatever."

Mr. Theis stated that despite everything, there was no reason for hysteria as to the winter wheat movement. He cited the total crops in the seven winter wheat states for several years past and compared these with this year's estimated harvest of 375 million bushels in that area. Both the 1937 and 1938 crops were practically that large and, as recently as 1931, a winter wheat harvest of 506,289,000 bushels was handled without a breakdown. He warned that co-operation between all the agencies involved was vitally necessary, but stated that, so far, this co-operation had been forthcoming and promised to continue.

At the Wichita meeting representatives of the Commodity Credit Corporation outlined the steps that organization is taking to relieve the situation. The number of employees in the Kansas City office has been

increased from 80 to more than 250 and the office is open for 16 hr. or more daily in an effort to wade through the mountains of paper work in moving the greatest wheat carry-over in history.

It was stated that 1,250,000 bushels of this 1940 crop had been moved through Milwaukee for lake movement east and 385,000 bushels for storage. Including wheat now enroute, 1,640,000 bushels have been shipped to the eastern seaboard. The Central States area has received 5,500,000 bushels, the Gulf ports 6 million bushels, interior Texas points 2,212,000 bushels and 700,000 bushels have been shipped to Mexico under the export subsidy arrangement with that country. Arrangements have also been made with Canada to move as much Canadian grain as possible from the lake elevators in the U. S. to make room for some of the government-loan grain.

As of May 31, grain markets where more than a million bushels of vacant storage space was available, outside the Southwest territory, were as follows:

Baltimore, Md.	10,664,000
Buffalo, N. Y.	18,648,000
Chicago, Ill.	12,462,000
Detroit, Mich.	1,282,000
Duluth, Minn.	10,564,000
Indianapolis, Ind.	1,360,000
Milwaukee, Wis.	3,648,000
Minneapolis, Minn.	36,526,000
New Orleans, La.	2,202,000
New York, N. Y.	5,083,000
Peoria, Ill.	1,501,000
Philadelphia, Pa.	4,344,000

The Railways' Part

The railways have been co-operating in the formation of local committees in all the terminals for "the gathering and dissemination of information concerning wheat transportation and storage." These consist of railway men, and representatives of wheat shippers, grain elevators, millers and the Commodity Credit Corporation. Their purpose is to keep everyone involved in the wheat harvest, movement and storage currently informed as to the entire situation and to anticipate and alleviate bottlenecks at terminal markets. In addition to membership on these committees, every railway in the wheat loading territory is prepared to supervise the car supply and movement more closely and more efficiently than ever before.

In May, the railways were called upon to handle much more carry-over wheat than usual, this traffic showing about 200 per cent increase over 1940 on most of the wheat-loading lines. To prevent a dissipation of the stocks of empty cars, the railways endeavored to find out the destination when cars were ordered, so that foreign empties could be used for wheat loading in the direction of home. A large part of the wheat loaded in May moved for only relatively short distances. When, however, the long hauls (Kansas City-Baltimore for example) began, arrangements were made for operation in solid trainloads and immediate return of the empties, so as to insure a quick turnaround of the cars and protect the empty supply in the field for the 1941 crop loading.

L. M. Betts Describes Situation

At the Wichita meeting previously referred to, L. M. Betts, manager, closed car section, Car Service division, A. A. R., described what the railways and the division have been doing to insure that car shortages will not occur, as follows:

"Unusual complications attending the movement of the winter wheat crop in the southwest this year afford the railroads the opportunity to demonstrate that they are organized to meet emergencies and are capable of acting as a unit to solve a national transportation prob-

lem. The complications involved consist primarily of the concurrence of a near record production of new wheat; a record carry-over of old wheat; an attempt to move a large volume of this old wheat from the territory where it was raised and held under government loan to distant storage immediately on the eve of the current harvest, if not in fact overlapping that harvest, and a general level of traffic of all sorts, national defense and general business already exceeding the peak levels of any year since 1930, when the big depression really began.

"These difficulties have been on the horizon for some time, but have been growing in size and intensity with closer approach. Early in April a program was instituted for a comprehensive relocation of western box cars to home territory, designed to increase the supply in western territory by 25,000 cars by June 15. In May, the most drastic order ever issued by the Car Service Division requires the immediate return of western box cars to home roads from eastern and southern territory without even allowing the customary privilege of loading them to the owner. These measures are taken to insure building up the supply of cars in the southwest in sufficient volume to protect the initial loading of new wheat to market, regardless of what other requirements of commerce and industry must be met at the same time.

"All of these orders and regulations governing the handling and distribution of cars are issued and supervised by an organization voluntarily set up by the railroads with no legal or governmental status and no power of enforcement of their decrees except by agreement; yet it may be truthfully said that the enforcement accomplished is as complete and adequate as it could have been under any sort of legal compulsion.

"By reason of these orders, there has been accomplished a marked increase in the supply of box cars on western railroads. As of May 15, at the end of the first month of the operation of the first or "quota" order, western roads reported an increase of 14,545 box cars on line. This was before any effect could be felt of the more drastic of the two orders. A daily tally of 11 important western grain loading railroads shows, from May 1 to 29, an increase of 21,248 in the number of plain or ordinary box cars on line of the type used for grain. The southwestern roads that will handle the first movement of the new crop are all engaged in a program of storing box cars, prepared for grain loading, at country stations in the grain belt ready for instant loading. As of May 29, the seven principal roads reported a total of 18,262 such cars on hand, compared with 14,983 on the same date last year.

"The achievement of this substantial increase in box car supply was made in the face of serious adverse factors. Not only are the railroads handling a volume of general traffic exceeding all recent peak levels, but since May 1, and mounting at an increasing daily rate thereafter, there is also being loaded a volume of old grain—wheat and corn—from storage points in the southwest to other territories that is unprecedented for this time of the year. To date, 18,352,481 bushels (about 10,500 carloads) of 1940 wheat have been ordered shipped from southwestern storage alone. Besides this, a large volume of old corn has been similarly moved. All of this grain has been under government loan which on maturity was surrendered to the Commodity Credit Corporation in liquidation. In addition, because of the enactment of legislation increasing the loan value of wheat next year, the general market has been strong and much so-called "free" wheat (not under loan) has been flowing into commercial channels. Were it not for this unusual volume of old grain now moving, a much greater number of grain cars

would be reported in storage. Nevertheless, they are available in western territory for further grain loading as needed.

"Much apprehension exists as to the adequacy of storage space for the new crop when harvest begins. Manifestly, the crop will be unusually large. While the May 1 estimate of the Department of Agriculture for the country as a whole of 653,105,000 bushels is only about 10 per cent over last year's about average crop, railroad car supply problems are not predicated on over-all conditions. In the southwestern area of principal production, three of the most important winter wheat states—Kansas, Oklahoma and Texas—show a combined increase of nearly one-third, with a 62 per cent increase in Texas. In this area, the crop seems quite certain to be exceeded only by the all-time record of 1931. Under ordinary conditions, this would be welcome news to all interests concerned—the producer, the grain warehouseman and the railroads—but with present storage capacity largely occupied, a serious question arises as to what disposition can be made of the new wheat after harvest.

"In 20 principal interior markets on May 24, with a public storage capacity of 327,768,000 bushels, space was 74.1 per cent full after deducting the usual 10 per cent for working space. In 11 important markets of the southwest, where the new crop movement will be starting in a few days, net space in public elevators was 76.2 per cent full. Information is not at the moment available as to space in country elevators in the southwest except in Kansas where a complete survey as of the same date, including the lower Missouri River markets of Kansas City and St. Joseph, Missouri, shows 49.2 per cent of net capacity of country elevators and 64.0 per cent of net capacity of terminal and sub-terminal elevators filled. The latter figure includes private as well as public stocks.

"Much has been said in the press about the winter wheat movement being a test of the ability of the railroads to meet the exacting needs of transportation and avoid the threat of government operation. It would be interesting to consider in just what respect government operation could have done a better job than the railroads have done in making preparations for this crop. While the test of adequate car supply is yet ahead, it is a fair statement that adequate preparations have been made as well as any operation, government or otherwise, could have done. It is a fair statement that the railroads are prepared to handle all the grain from the country producing districts that can be accommodated promptly with terminal or sub-terminal storage. It is a fair statement that the railroads have no surplus cars to supply for any form of grain storage, either deliberate or as a result of accumulations at markets or abuse of reconsignment or diversion privileges. It is fair warning to issue that so far as is in any degree possible, embargoes or other means will be fully used to curb any tendency to the holding of cars under load of any commodity at any point and for any reason.

"We believe that we will have the unstinted co-operation of all interests concerned in the handling of the grain crop this year. The Department of Agriculture has been working actively to assist in any way practicable in alleviating present difficult conditions. The state committees it has appointed, through which we will have the active support of the Agricultural Adjustment Administration and all factors of the grain and milling trade, will be most helpful. The state inspection departments can always be relied upon to do their part in full measure. The terminal grain committees of the shippers advisory boards will be our mainstay. By working to-

(Continued on page 1069)



The Problems Involved in Handling Today's Heavy Traffic Were Discussed at the Superintendents' Meeting

Superintendents Hold "Brass Tacks" Convention

Operating men consider subjects of immediate, current interest in 47th annual meeting at Chicago

THE 47th annual convention of the American Association of Railroad Superintendents, held at the Hotel Stevens, Chicago, on June 3, 4 and 5, was characterized by the practicality and timeliness of the addresses and reports and by the largest attendance in recent years, with 300 railway men registered, including more than 200 members. Every address and report and the discussion that followed were concerned with the superintendent's problems of today and the immediate future when rail transportation promises to be put to its most crucial test. The meetings were presided over by President F. B. Whitman, superintendent, Chicago, Burlington & Quincy, St. Joseph, Mo.

The superintendents were welcomed to Chicago by Samuel O. Dunn, editor of the *Railway Age*. The annual luncheon was attended by more than 500 members and guests, who were addressed by C. H. Buford, vice-president, A. A. R. Other addresses were presented by Ralph Budd, president, Chicago, Burlington & Quincy and transportation commissioner of the Advisory Commission to the Council of National Defense; O. W. Eschbach, dean, Northwestern Technological Institute; Harvey Marmaduke, director, employee suggestion system,

Illinois Central; F. W. Curtis, superintendent safety, Denver & Rio Grande Western; and W. S. Topping, chief inspector, bureau of explosives, A. A. R., Washington. A special symposium on car supply was participated in by W. C. Kendall, chairman, Car Service division, A. A. R., Washington; Lawrence Farlow, secretary, Farmers Grain Dealers Association, Bloomington, Ill., and H. E. Graham, general traffic manager, Jones & Laughlin Steel Corporation, Pittsburgh, Pa.

Election of Officers

P. M. Shoemaker, transportation assistant on the staff of the president of the Delaware, Lackawanna & Western, was elected president of the association for the coming year. Other officers elected were as follows: first vice-president, R. J. McDermott, assistant general superintendent transportation, Missouri, St. Louis; second vice-president, E. C. Gegenheimer, superintendent, Pennsylvania, Altoona, Pa.; third vice-president, G. T. Coleman, general superintendent transportation, Canadian Pacific, Montreal, P. Q.; fourth vice-president, E. J. Stubbs, superintendent transportation, Erie, Cleveland,

Ohio; secretary-treasurer, F. O. Whiteman, Chicago (re-elected).

R. O. Jensen, assistant superintendent, M. St. P. & S. S. M., was elected a director for one-year; and O. L. Gray, superintendent, A. T. & S. F.; O. W. Limestall, general superintendent, C. R. I. & P.; and L. B. Kendall, superintendent, C. & N. W., were elected directors for three years.

As customary, Chicago was selected as the place for the 1942 convention, to be held on May 12-14, 1942.

Samuel O. Dunn Discusses Railway Situation

In welcoming the association to Chicago, Mr. Dunn pointed out that we are confronted at the present time with a most interesting situation in the railroad industry. Owing to defense expenditures and other causes, the railways are having a large increase in traffic, which will continue for some time. After a year of our participation in the last war, government operation was adopted and the question is naturally raised as to whether this will occur again. On this question, no predictions can be made because the decision will rest entirely with one man. However, the contrast between the situation existing in 1917-18 and in 1941 indicates that there will be no justification for such a step because of inability of the railroads to provide equipment or to render the service required.

Mr. Dunn pointed out that, in January, 1917, the railways reported an average shortage of 62,000 cars, in February, 110,000 cars, in March, 131,000 cars and in April, 145,000 cars. This compares with a net surplus of 125,000 cars in January of this year, 99,000 cars in February, and 77,000 cars in March. Mr. Dunn further outlined the difficulties under which the railways were operating in 1917, as the result of confused ordering and uncontrolled priority orders.

He stated further that, to meet equipment demands, the railways bought 101 locomotives and 19,127 freight cars in May, 1941, the largest purchases in any one month for 12 years; that 520 locomotives and 62,760 freight cars were bought in the first five months of 1941, an increase of 312 locomotives and 53,492 cars as compared with the same period in 1940; and that the purchase of 989 locomotives and 118,363 freight cars in the 12 months ending June 1, 1941, exceeded the buying rate of 1929.

Committee Reports

The committee reports and several of the addresses which accompanied them will be abstracted fully in later issues of the *Railway Age*. They are summarized in the following resume.

Personnel Problems

The problems involved in the rapid increase in the number of employees necessary to handle the expanding traffic were dealt with in a committee report and two addresses.

A committee of which R. O. Jensen, assistant superintendent, Minneapolis, St. Paul & Sault Ste. Marie, Chicago, was chairman, reported on the selection and training of a competent yard force. The report dealt with all phases of the proper selection of terminal personnel and recommended that only high-school graduates be hired, that yard employees be accepted as young as 18 years old, and that written instructions in the form

of a manual be issued covering all of the more important yard positions.

O. W. Eschbach, dean, Northwestern Technological Institute, and former special assistant in the personnel department of the American Telephone & Telegraph Company, supplemented the report with an address in which he described the methods used by that company a few years ago when it was suddenly confronted with the necessity of doubling the number of its employees in a short time. The problems of preparing for an adequate supervisory force in this highly technical industry must be similar to those in the equally complicated railway industry, Mr. Eschbach said, particularly since the problem was also national in scope, involving localities that were widely distributed geographically.

"The first step," Mr. Eschbach continued, "was to chart the number and type of jobs that promised to be available, since the number of people needed for supervisory or technical positions of reasonably high grade depends on two factors at least—the size of the organization and the rate at which it is growing." Mr. Eschbach described the methods used in recruiting new graduates from colleges, but cautioned against any rigid rule against non-college men, saying: "There is much good material in character and brains floating around this country, without formal education beyond high school, that can be developed and I do not believe it is necessary to have a college education and a degree to hold a major supervisory position in American industry." Mr. Eschbach also stated that a survey showed that the best results were obtained from men who were assigned to one specific department and kept there, rather than from those who were permitted to drift around through various departments.

H. C. Marmaduke, manager, employees' suggestion system, Illinois Central, described how, in 27 months operation of a suggested plan, the 30,000 employees of the I. C. sent in more than 38,000 suggestions, of which 3,811, or 10 per cent, have been adopted and payments of \$37,000 made to employees on the general basis of the money saved by the suggestions. He also described how the interest of the employees was being maintained at a high level by posting the names of the winners at various strategic locations and by a constant stream of publicity in the form of placards, articles and slogans. The basis of the plan is rewarding the employees for their observation and ingenuity. In other words, the 30,000 I. C. employees have put their 60,000 eyes and 60,000 ears to work to the benefit of their railroad and themselves.

Safety

A committee under the chairmanship of R. C. Williams, superintendent, Missouri Pacific, presented a report on practical means for securing compliance with operating rules and hence bring about greater safety. In its report, the committee recommends stressing operating rules at all times and the pursuance by the superintendents of definite plans of various sorts to see that this important feature of operation is constantly kept alive and interesting to employees.

F. W. Curtis, superintendent safety, Denver & Rio Grande Western, who is chairman of the train accident committee of the Safety section, A. A. R., then spoke on the cause behind train accidents, particularly those involving man failures, which he said, were responsible for 37 per cent of all train accidents in 1939 and, for the first time in 20 years, exceeded equipment or track failures.

W. S. Topping, chief inspector, Bureau of Explosives,

A. A. R., stated that the proper handling of explosive and inflammable material is particularly important at this time. He described in detail the correct procedure for the safe handling of tank cars loaded with inflammable liquids and what to do in cases of leakage or accidents.

Other Committee Reports

E. P. Reynolds, supervisor of merchandise service, Chesapeake & Ohio, headed a committee which reported on means for expediting the handling of waybills and car records at terminals and interchange points. In modern railway practice, it was pointed out, it is no longer permissible to delay the movement of cars on the road and in terminals because of dilatory paper work, and this report outlined ways and means whereby such paper work may be speeded up and mechanized to obtain the desired result. Mr. Reynolds also distributed copies of the simplified unit bill of lading developed and recommended by the A. A. R., and described its use.

W. Rogers, superintendent of telegraph, Missouri Pacific, then described the elaborate teletype installation on the M. P., which has the result of giving all yards through which cars will move complete advance information so that the work may be lined up in advance. He stated that some difficulties were encountered in educating officers and employees as to the advantages, but, once these were ironed out, the economies effected were extremely gratifying.

A committee of which S. F. McGranahan, assistant superintendent of transportation, Erie, was chairman, reported on the superintendent's responsibility for l. c. l. traffic. The report pointed out how the superintendent has a definite responsibility for the following phases of l. c. l. traffic: improved service to the public; sales effort; line-haul truck service and rail-highway co-ordination; improved methods of handling; and control of costs. The report then analyzed in detail what the superintendent could accomplish by attention to each of these subjects and stated that, with the present prospects of a material increase in l. c. l. traffic, study and attention are particularly necessary, to give shippers and receivers the maximum service, and, at the same time, bring in additional revenue for the railways.

A committee of which J. F. Shaffer, superintendent terminals, Chesapeake & Ohio, was chairman, reported on the cause and cure of rough handling of cars. This report placed the responsibility for rough handling squarely on the superintendent, since the human factor is the key to the entire problem and stated that fast handling can be accomplished without rough handling, if the superintendent sees to it that his men are properly educated. Joe Marshall, special representative, Freight Claim division, A. A. R., cited figures to prove the need for careful handling and the resultant effect on the railways' pocket-book. E. J. League, inspector, Bureau of Explosives, A. A. R., cautioned the superintendents as to the careful handling of explosives, which are now moving in increasing quantities.

C. C. Cunningham, superintendent, Chicago, Rock Island & Pacific, as chairman of a committee reported on the operating aspects of high-speed passenger service. This report presented an important study of the speeds at which such trains may be operated in various territories; of the type of roadway and superelevation of curves necessary; of the dispatching and scheduling of such trains to reduce interference with other traffic as much as possible; of the proper signals; of the most efficient power and equipment; of handling the traffic; and of training the personnel.

H. C. Munson, superintendent, Chicago, Milwaukee,

St. Paul & Pacific, as chairman of a committee presented a report on the operating aspects of maintenance of way activities. This report emphasized the necessity for co-operation between the operating and maintenance departments, particularly in the scheduling of work and the ordering of materials. The report also recommended the use of certain off-track maintenance machinery and pointed to several practices, such as the improper blowing off of boilers and the use of sand that are injurious to the track structure.

A committee of which A. F. McSweeney, superintendent freight transportation, Pennsylvania, was chairman, reported on the superintendent's responsibility for car hire. This report covered per diem; the problems brought about by national defense traffic; and methods of saving cars in handling l. c. l. traffic. The addresses delivered on car supply by W. C. Kendall, chairman, Car Service division, A. A. R.; Lawrence Farlow, secretary, Farmers Grain Dealers Association and H. E. Graham, general traffic manager, Jones & Laughlin Steel Company, are of timely and topical interest during the present crucial period of heavy traffic and will be published in detail in next week's issue of the *Railway Age*.

Ralph Budd Describes Railway Performance

Mr. Budd reviewed the importance of the superintendent in the transportation scheme.

"Six years ago I had the privilege of addressing you and my talk then dealt with the importance of not overlooking efficiency of operation, especially in freight service," Mr. Budd said. "The volume of traffic was then at a low level and efforts were being made to stimulate business by innovations in the way of streamline trains and faster schedules for both freight and passengers. It seemed appropriate at that time to call attention to the fact that the old fundamental of sound railroading continued as ever to be the economical movement of freight. Today, I want to reiterate and emphasize that point. We face very different conditions from those we faced in 1935. Now there is more traffic and it is rising in volume. Since the outbreak of the war in Europe about two years ago traffic of all kinds has increased. In consequence, 1939 railroad carloadings were 11.3 per cent above those of 1938; in 1940 they were 7.2 per cent above 1939. The volume for 1941 is uncertain, but for the first five months it is about 16 per cent ahead of 1940. Various methods have been tried for arriving at a reliable figure for the year, but with such a rapidly moving scene the basic data are changing, and even more difficult is the translation of estimated defense and civilian activities into carloadings. For what these estimates are worth, they range from 40 million to 42 million carloads in 1941, compared with 36,354,000 in 1940, and nearly 53 million in 1929.

"The situation varies greatly in different regions and with different commodities. In discussing with your associates the handling of prospective traffic, I am sure you have found the same confidence in their ability to do the job that I have found throughout the country.

"There is everywhere among men of your kind a sense of responsibility for providing the best of railway service during this great national effort, and a determination that such service shall not be wanting. This is a most heartening thing to know, and it is also one of the most important facts about the National Defense program.

So many transportation features are involved in this effort that no one of them can accurately be called the most essential.

"Iron ore certainly is as indispensable as any commodity, both for defense and civilian use, and the great quantity required gives it rank among the firsts in any list. Up to June 1 the railroads had brought to Two Harbors, Duluth, and Superior 13,523,246 tons of iron ore. The highest previous record to June 1 was in 1937 when 10,948,662 tons were brought down. The present weekly rate is upwards of 2,000,000 tons, compared with 1,834,145 tons, which was the best weekly rate in 1929, the year of largest total ore movement. Then the same railroads had 22,984 ore cars, compared with 21,739 cars at present. The present cars are larger and quicker dumping; they are hauled by larger and faster locomotives. Nearly all of the facilities are better than they ever were before, as are the methods of operation. It is still early in the season, but so far as events are within the control of railway operating officials there is no reason why the present rate of ore movement should not continue.

"These figures for iron ore are revealing. They may not be typical because few, if any, other commodities receive such highly special handling. In fact, the co-ordinated transportation of iron ore by rail and water is one of the most efficient in the world. The handling of petroleum and its products are equally as specialized, but not by rail—that movement is mostly by water and pipe line. It is not readily comparable with railroad operation, but the rail and water movement of iron ore, and the water and pipe line movement of petroleum and its products, illustrate the advances in transportation in recent years. Performances like these make one wonder what the potential capacity of the nation's transportation plant is.

"Coal is another basic commodity. The best information available indicates that approximately 500 million tons of bituminous coal will be handled by the railways in 1941. Because of the cessation of work during April and early May, about 40 million tons of coal was not mined and hauled at that time, while the railway equipment for moving it was standing idle. The result is that the rate of movement during the rest of the year will be substantially higher than it would have been otherwise. It also has this significance—if 500 million tons are moved in 46½ weeks instead of 52 weeks, then the same transportation plant, without any more intensive use, could move approximately 12 per cent more in a year if there were no interruptions. That would be 560 million tons. Any substantial diversion of coal traffic in some sections of the country from the normal rail-water routes to all-rail movements may place heavy and unusual demands upon the railroads, coal producers, and coal consumers.

The Problem We Face

"We often have looked with longing at the record traffic of 1926 and 1929 and wondered if it ever would come again. Well, it may be on the way. Were it not for the fact that it is due to war, what a happy prospect that would be! But the job is vastly more important than it could be under other circumstances, and calls for the very best efforts of every officer and employee. Of course, the railway part of the country's total transportation now is only about two-thirds. The carriers which handle the other third, or about half as much as the railroads, are essential parts of the national transport system, too. Dislocations are occurring by reason of diminishing some of these others, for example, the taking of tankers from

the Gulf to Atlantic service. It is certain that by reason of this diversion, tank cars owned or leased by oil companies will come into use again up to their full capacity. As you know, a large number of such cars have been made idle during the last few years through the use of pipe lines.

"Handling the grain crop is the immediate seasonal transportation problem of the railways. The crop this year is large and harvest is about to begin. Storage capacity is inadequate, so it appears that a considerable quantity of grain cannot be moved until later when space is available. To permit loading of grain or anything else in railway cars and leaving it there would be to repeat the most serious transportation mistake of the World War. That must be avoided. We must insist that unless cars can be loaded promptly when placed, and promptly unloaded at destination, we are not justified in providing them. A relatively small amount of elevator space will be made ready in the central-west and southwest by moving some old grain to port elevators on the Atlantic and Gulf coasts. Unfortunately, this movement could not be made some months ago, but it began late in May, and while it provides some storage in the middle-west, it adds to railroad traffic a long haul which will require several thousand cars at a time when the winter wheat harvest is in progress. Harvesting with combines in recent years has made for greatly increased and sudden demands for grain cars during a short period. Some of you no doubt will recall situations arising from these demands and the methods employed to avoid terminal congestions, delays to equipment, and unequal supply to shippers. Any improved technique should be effected wherever possible.

"This is a time to discontinue certain practices which may be permissible when there is a large surplus of cars. You will know of many such practices—some of them are common to all areas, some are local. I hope, for instance, that all of you will unload company material and release cars loaded with it, as promptly as you want shippers to unload their cars. I hope that at competitive points the several roads will not undertake to outdo each other in accumulating cars for prospective loading. While you cannot control it entirely, I hope that a way will be found to avoid using an unduly long time for the movement of cars, for shippers' convenience. It is hard to believe, but such delays are being requested on some national defense material. I should like also to see a concerted effort made to get more heavy tonnage trains on the roads as a means of bettering efficiency, and thus increasing the use of plant and facilities.

"From time to time additional equipment will be needed to meet the rising tide of traffic. I know that the railway managements, individually and co-operatively, are endeavoring to keep ahead of the demands. Percentages of bad order cars are being reduced, large number of cars and locomotives have been put into service, many are being built, and more will be ordered. Such provision for adequate equipment is about the best support which the managements can give to you men who actually handle the details of operation. I know that the large investments being made in cars and locomotives are with the assurance that you will get from them maximum use and efficiency.

Making a Fine Record

"In the railroad industry, high standards of effort and accomplishment are normal, and good work is taken for granted—as a matter of course. A competent, busy superintendent no doubt derives the greatest satisfaction from consciousness of work well done, and no one can

know of his successful handling of the multitude of tasks which make up his daily life. Also, the general officers are so busy with the problems which come to them that they seldom take the time for favorable comment. This is in no sense due to lack of appreciation of successful work, but merely a custom of the business. As a result, I suspect that most superintendents proceed on the theory that no news is good news.

"On this occasion, however, I feel that it would be appropriate for me to disregard the common custom and to tell you what a splendid job you have been, and are doing, in operating the railroads of the country. I see the reports of the individual roads and for the country as a whole, and I know what they indicate. Also from many sources—from shippers, from builders of defense plants and cantonments, from officers of the army and navy, and from other government officers responsible for various aspects of the defense program—I hear the same story; the railroad superintendents and their local representatives are doing a good job. This splendid record of the railways, under unusual conditions caused by an almost overnight change from depression to great business activity, is a tribute to the skill, experience, and resourcefulness of the operating officers, and of these, the superintendents carry perhaps the heaviest load. All of the ingenuity devoted to inventions and improvements, all of the money invested in new equipment and facilities, and all of the energy and skill of those who man the trains, the yards, and the shops, would be futile without expert managerial direction and supervision.

"Now that preparedness for defense has become a national effort, it is apparent that skillful direction of the activity of labor and the wise use of capital are indispensable. In every unit of every industry are men qualified by ability and experience, who know how to run the business; success or failure depends largely upon them. In the railroad industry you men constitute the front line of management. On your respective divisions, and in the territory they serve, to all intents and purposes you personify the railroad. On you men rests the primary responsibility for continuing the high standard of efficient railway operation. I congratulate you on your splendid achievements and have every confidence that they will be continued. *The Watchword Is Performance.*"

C. H. Buford Talks

C. H. Buford, vice-president, A. A. R., addressed the luncheon group on Wednesday, June 4, as follows.

"World conditions are changing rapidly and our problems today are different than we expected they would be even a few months ago. The defense program, augmented by the lend-lease bill, has grown with incredible speed. About 4 billion dollars was spent on the defense program in 1940. It is estimated that 17 billion dollars will be spent in 1941 and 23 billion dollars in 1942. On top of this is the 7 billion dollars already appropriated under the lend-lease program and something like 3½ billion dollars of British orders placed in the United States.

"This is the situation as it appears today. What tomorrow will bring is anybody's guess, but we may be assured that production all along the line will be pushed to maximum levels. At the moment, all this is in addition to normal business requirements, which themselves have been tremendously stimulated by the increased buying power of individuals. All of this money being spent by the government and by individuals will make more busi-

ness and it will increase rail movement of commodities. This increase in rail business is the thing we want to discuss.

"Statisticians have been working for months trying to determine how much business the railroads will have to move. They all get different answers. Some get answers that convince them that the railroads will be unable to handle the business; others get answers that are complimentary to railroad capacity and efficiency. There is no doubt about the true answer being somewhere between these extremes of thought, but I do not believe that anyone knows how much business the railroads will be called upon to handle. For example, in all of the studies, use is made of some index of production or some other factor for measuring the business which is expected to develop in this country. This is not sufficient because in addition to the normal increase in rail transportation there is in evidence business to be moved that formerly moved by water.

"On December 31, 1940, there were in intercoastal service 113 freighters having 1,080,000 dead weight tons capacity. On April 30 this had been reduced to 96 freighters having about 936,000 dead weight tons capacity. By the last of June about 40 per cent of these remaining vessels will be withdrawn from service. There were 12 tankers in intercoastal service on January 1, 1941, and about half have since been withdrawn. It is probable that all of the intercoastal freighters and tankers will be placed in other service and a large part of the business that these vessels handled in intercoastal movement will probably move by rail.

"Another thing: Ships are now discharging cargo at our Pacific ports that formerly moved through the Panama Canal to the Atlantic seaboard and to Europe. This is done to save time on account of the shortage of ships, and the business will move by rail from the Pacific Coast to Eastern destinations. No one can tell how much additional business will move by rail on account of this diversion of ships. Some have suggested that we make as close an estimate as possible and then multiply it by two. Our study of business moving through the Panama Canal does not disclose a possible land movement of commodities formerly moving by water that will be particularly burdensome to the railroads.

"Our present loadings appear to some people to be dangerously high for this time of year. Some reasons for this high loading are obvious.

"For example, there is a higher than seasonal loading of coal, caused largely by the necessity for building up needed stocks that were depleted by the recent labor stoppage in the coal industry. There is also evidence of building up stocks of other commodities against future needs. Some of this accumulation is no doubt due to people becoming nervous and fearful of shortage because they hear so much talk of priorities and bottlenecks. It is possible that the present high car loadings may tend to reduce the requirements for transportation in later months.

"With the uncertainties that exist, railroad people should work on the known fact that "every little bit added to what you have makes a little bit more" and for the sake of safety assume that the load will be larger than is anticipated. In fact, let us assume that the load will be much more than we expect. What can we do under those circumstances? We might just as well explore this possibility because others are doing it. Some who have done it have become frightened and are whispering that the railroads will fail. Some of these whispers are reaching the ears of newspaper and magazine reporters and they are writing about it. We cannot blame these fellows for reporting what they hear, but people

generally and railroad men in particular should not be confused or alarmed by it.

Additions to Equipment

"There are two important things to be considered: First, what has railroad management provided in the way of tools with which you must do the job and, second, what are you going to do with those tools?

"On September 1, 1939, the Germans entered Poland and things began to look serious. From that date to the end of the year the railroads added 3,094,000 net tons of car capacity to their serviceable equipment supply through purchase, rebuilding and repairs. From January 1, 1940, to December 31, 1940, they added 2,840,000 net tons of car capacity in the same manner. Present plans contemplate an additional 2,457,000 net tons to be added this year. This will mean an addition of 8,391,000 net tons of car capacity in 28 months. Locomotives are being purchased and repaired to keep up with the car program.

"To carry out the plans for this year, railroads are now working on large building and repair programs. Orders have been placed for about all the cars that commercial car plants can turn out on the present production basis by the fall months of this year. This effort by management to increase the equipment supply is being retarded by our inability to get steel. Just recently two large car building plants have joined others on a reduced production basis due to shortage of steel. Car builders have presented data which convinces me that to date we have lost production of 5,000 freight cars because of the shortage of steel and that we are continuing to lose cars from this cause. One railroad car shop in this state is on a 5-day week basis, with an additional 120 men idle on account of the shortage of steel for constructing cars.

"We have had repeated assurance for several months that the railroads would get the steel they need. We have recently been told there would be a change and we would actually get the material. We hope this is true and that within a short time these car plants will go to full production. I tell you this so you will know that there has been a sincere effort on the part of the railroads to get additional equipment.

"Be assured the railroads will keep after steel and all other material needed to insure an adequate supply of cars and locomotives. After they have done all they can to supply you with tools, we come to the second question and that is—what are you going to do with these tools? Let us consider this under the assumption that much more business is to be moved than was expected.

Using the Equipment

"Before getting into the details of it, let us examine results of recent years and see what we have done and what we had to do it with. We have passed through many years when we had a large surplus of cars and locomotives. In order to find room, we have stored cars on industrial and other sidings and we have had many tracks blocked with idle locomotives. We have been retiring surplus obsolete units and building larger and more efficient units. Some of us and some of our subordinate officers may have had the larger part of their training in these years of transportation surplus—in years, let us say, when the job was easy. We now have a job that will require skill in the use of transportation tools. We must put forth a maximum effort to do a better job than has ever been done before. Can we do it?

"I have said before, and want to repeat, that no one knows the capacity of the American railroads, and no one will know until the demand calls for a maximum effort. Maximum transportation capacity will be attained when we get the maximum use of the active tools of transportation and when the officers and employees put forth their best effort, which they always do in an emergency. Emergencies eliminate the weak and inefficient; as pressure continues, new methods are developed and new ways are found to do the things that changed conditions require. Most of you superintendents here today have passed through emergencies. You are seasoned men and you will understand the supreme confidence I have in railroad officers and employees to cope with any emergency. You will also understand why I have repeatedly said we can do the job before us.

"Now, specifically, what will we do if all this business we are looking and hoping for actually comes. It is just this: We are going to get more transportation service out of our cars and locomotives. We are going to get more mileage out of them, realizing as we do that they are useless for transportation when standing still.

"There is no use in wasting time enumerating the scores of things that can and will be done to increase the effective use of cars and locomotives. You superintendents know how to do it and as the need develops you will do it. I am convinced of this because within the past week the chief operating officers held a meeting in Chicago and one of the things discussed at the meeting was the efficient use of cars and locomotives. These men are determined that there shall be no failure to carry out the pledge the executives made when they said there would be no shortage in transportation to meet the needs of commerce and defense. They will devote sufficient of their personal time to the job of proper use of cars and locomotives to see that it is done. Their interest in the matter will be a help to you and will insure the job being done."

Railways Prepared for Wheat Crop

(Continued from page 1063)

gether, we will accomplish all that can be done by any human organization. None of us will expect the impossible, but with the spirit of accomplishment already shown, and the will to do the job, we may all pull off a miracle or two before this task is done. And we believe we will show an accomplishment by private interests working together equal to any result possible through any form of government organization or operation."

Late reports from the winter wheat area indicate that heavy rains are interfering with the harvesting, which has already been somewhat delayed owing to wet weather. This is advantageous in one respect in that it gives the railways more time to move the 1940 wheat before the current year's crop is dumped upon them and will create less overlap. In another respect it is not so advantageous, as it may mean that the entire winter wheat crop from Texas to Kansas will be harvested at approximately the same time.

ONCE IN A MILLION is the odds on a shipper receiving consecutive cars having consecutive numbers but it happened to the Pondosa Pine Lumber Company recently of Monte Lake, B. C. This concern recently forwarded a quantity of lumber to a firm in Port Arthur, Ont., in Canadian National freight car No. 587287. A week later the concern shipped another load of lumber to the same consignee in car No. 587288, according to the Canadian National News Letter.

4—How Referee Stone Lost 179 Cases

AN agreement between a railroad and its employees is a contract; hence it should be interpreted and applied by the same standards of decision as other written contracts. So runs the gist of an unusual memorandum submitted by Referee Royal A. Stone (a justice of the Supreme Court of Minnesota) to the National Railroad Adjustment Board at the time he denied an employee's claim for back pay.

The Terminal Railroad of St. Louis employs certain passenger yard crews in "around-the-clock service," relieving each other at 8 a. m., 4 p. m. and 12 midnight, respectively. During each shift these crews are assigned to two short scheduled runs for the transportation of railroad employees to and from work, designated as "cab runs." For the remainder of the shifts the crews engage in passenger switching and transfer work.

One day when the engineer on the third-shift crew returned to his engine terminal at 8 a. m. after a regular "cab run," he was not relieved but was assigned to switching in the passenger yard until 9:30 a. m. On this and subsequent dates when assigned to work into the first shift, he was paid eight hours at straight-time and time-and-one-half on a minute basis for all overtime. The Brotherhood of Locomotive Engineers ultimately filed claim with the Adjustment Board for pay for a new day (eight hours) at *time-and-one-half* for services performed after 8 a. m. on each day on which the engineer worked beyond the third shift.

It was the employee's contention that since the engineer had returned to his designated point for going off duty, following completion of his scheduled run, at the end of his eight-hour turn, "he had finished his day"; the 90 min. which he worked subsequent thereto constituted a new day of eight hours minimum, payable at overtime rates. Controlling rules of the engineers' agreement, they held, were: Article 2, "Eight hours or less shall constitute a day's work"; Article 4 "Regularly-assigned crews shall have a fixed starting time, and the starting time of a crew will not be changed without at least 48 hours advance notice"; and Article 5, stating that "Engineers shall have designated points for going on and off duty."

The union also took the broad position that the holding of the claimant for overtime duty "was a deliberate plan to have the third-shift crew do the work formerly done by the first-shift crew; the first-shift relief was just as available on this date as they had been every day since these assignments were established, and could have relieved the third-shift crew in the same manner as always heretofore."

The railroad pointed out that because of its "diversified service," the war-time federal Railroad Administration had ruled its operations "unclassified" and allowed locomotive crews compensation on the relatively higher basis of through freight rates, although their service was chiefly yard switching. This provision was written into subsequent schedules. The fact, therefore, that "all engines will be considered in unclassified service," according to Article 1 of the current agreement with engineers, precludes any basis for claims for "a new day," which must relate to two or more classes of service performed consecutively; i. e., passenger, through freight, local freight or switching. Also there is no rule in the current agreement providing for the start of a new day after an employee has been in service eight hours or longer, nor is there an automatic release rule.

Referee Stone, in denying the claim, submitted a three-

page memorandum stating the reasons for his decision—a step rarely taken by the taciturn Adjustment Board referees. His opinion is based, he wrote, on the principle that a schedule of working rules is a contract, which "must be considered as a whole, each part interpreted in whatever light may be shed on it by any or all others."

Now the rule that "eight hours or less shall constitute a day's work"—upon which the claim is based—does not, nor does any other rule in the agreement, state that a new day shall begin at the expiration of a regular assignment. In fact, the article in the agreement immediately following (Article 3) declares specifically that all time worked in excess of eight hours' *continuous* service in a 24-hr. period "shall be paid for as overtime."

If then, the claimant engineer is entitled to a "new day" for 90 min. overtime, any employee under the schedule whose continuous service is even five minutes more than eight hours, is owed a new day's pay. Why, then, bother with a provision for overtime at all, since, if this claim were allowed, all overtime must be considered a "new day?" "If the provision for overtime does not apply to all such cases it applies to nothing. To deny Article 3 of all effect, as we must to allow this claim, is to expunge it from the contract. That can rightfully be done only by a new agreement of the parties amending the schedule. We have no right to do this for them."

The Brotherhood claimed that the employment of the engineer for a portion of the shift following his own was a "deliberate plan" to take work away from the crew assigned to that shift. Why then, asked Referee Stone, pay damages to the crew which profits from the alleged wrong, rather than to those who have lost by it? Payment of a premium to those profiting by a supposed breach of contract is plainly not provided in the schedule.

Judge Stone had much to say of "penalty," or damage, claims of this nature. He considered the question of great importance to labor generally, since "if the system is right for railroad men, it is equally so for all industry, and should be spread over the whole field." It also is highly important to the shippers and passengers who foot the bills. "How much these 'penalty days' are costing, the referee has no means of knowing. If the huge payments involved are to continue, not only for no equivalent in service, but also to those who profit rather than to those who lose by the supposed wrong, it is, the referee respectfully submits, a situation so utterly indefensible as to demand reversal by legislation, if it defies correction by existing agencies."

Distortion of written agreements, such as this claim represents, in reality threatens the efficacy of the collective bargaining principle, according to the referee. "Collective bargaining, to be successful, must result in real contracts, binding as such on all the parties and to be enforced as written. If either party can dictate the result by its 'economic power,' or by a threat to exercise that power, rather than by law and reason, what was intended to be a contract is converted into a mere deceptive bit of paper and collective bargaining thwarted of its essential purpose."

For Reader's Check:—N. R. A. B., First division. Award No. 5080, Docket No. 5821; Brotherhood of Locomotive Engineers; Terminal Railroad Association of St. Louis.

[It will be recalled that Judge Stone was not permitted to render a decision in almost all of 181 dead-

locked cases to which he was assigned in 1940. As pointed out in the *Railway Age* of June 29, 1940, page 1149, the unions somehow learned that he intended to decide against them in many of the cases and withdrew their claims before the referee could file a decision. The latter was notified by the secretary of the Board that 179 cases had been withdrawn and hence no longer subject to his consideration.

Most of the 181 cases in question were claims submitted by the unions and hence withdrawable. But a small number were cases submitted to the Adjustment Board jointly by the respective carriers and unions. The railroads refused to withdraw the cases and insisted upon a decision from the referee. That is the reason why this interesting Terminal Railroad case was not buried in the limbo of unrendered decisions.—Ed.]

St. Lawrence Message Goes to Congress

WASHINGTON, D. C.

DRAMATIZING his plea with such statements as "electric power and transportation are limiting factors in the production of planes, guns, tanks, and ships," and "expanding production is going to burden the railroads to the limit," President Roosevelt on June 5 sent to Congress his special message recommending enactment of legislation authorizing the construction of the St. Lawrence seaway and power project, pursuant to the United States-Canadian joint agreement of March 19. As noted in the *Railway Age* of June 7, page 1020, the authorization bill (H. R. 4927) has been introduced in the House by Chairman Mansfield of the committee on rivers and harbors, and the hearings originally scheduled for June 16 have now been set for the 17th.

The President, so his message said, is advised that the project can be built in four years; and "under emergency pressure it may be completed in less time." At his June 6 press conference, Mr. Roosevelt said that the best timetables indicated that the project could be completed in just short of four years, while the Army engineers are at work on plans to get lake-built merchant ships out of the St. Lawrence within two years. The message said that the President would like to agree with those who say that the "country's danger" will be over in four years; but "we have no right to take chances with the national safety," for Mr. Roosevelt knows "of no single project of this nature more important to this country's future in peace or war." Congress was told that its action "will either make available or withhold 2,200,000 horsepower of low-cost electric power for the joint defense of North America . . . will either open or keep bottled up one of the greatest transportation resources ever offered to a people."

Must Keep Pace with "Enemies of Democracy"

"The enemies of democracy," said the message, "are developing every hydroelectric resource and every waterway from Norway to the Dardanelles. Are we to allow this continent to be outmatched because short-sighted interests oppose the development of one of our greatest resources?" Then after his arguments in support of the project's power phase, the President had this to say of transportation:

"Our defense production is a gigantic assembly line. Transportation is its conveyor belt. If raw materials

cannot flow freely to our great industrial plants and the products cannot move continuously to the front, defense breaks down. Bottlenecks in transportation are as serious as shortages of power. Expanding production is going to burden the railroads to the limit. We are expanding their rolling stock as fast as we can, but even the present orders for new cars and locomotives are competing for manufacturing capacity which could otherwise produce tanks and other items of heavy armament.

"The seaway will help prevent transportation bottlenecks. It will provide a great highway to and from important defense production areas. It will cut by more than a thousand miles the stretch of dangerous open water which must be traveled by supplies to Great Britain and strategic North Atlantic bases. It will increase our capacity to build ships. The Great Lakes today hold many shipyards and drydocks, as well as resources of men and materials for shipbuilding. They are bottled up because we have delayed completing the seaway. If we start the seaway now, scores of additional merchant ships may be built in coastal yards freed by transferring a portion of the longer-term naval program to the Great Lakes.

"The St. Lawrence project must be expedited. No comparable power, shipbuilding, and transportation facilities can be made available in the time required to construct this project. In dealing with the present emergency too many people have underestimated the degree to which our resources will be taxed. We cannot afford to make any mistakes of that kind."

Build-Up Continues

On the same day that the President's message went to Congress, the Department of Commerce made public Part IV of the St. Lawrence Survey being conducted under the direction of Dr. N. R. Danielian. Entitled "The Effect of the St. Lawrence Seaway Upon Existing Harbors," this treatise finds it "clear" that in the light of "all considerations" New York, Boston and Buffalo "stand to gain much and lose but little from the St. Lawrence project." Other reports which have come from this survey, undertaken at the request of the President, have like this one reached conclusions favorable to the point of view of the project's proponents.

Also on the Presidential-message day, the Office of Production Management, without mentioning any St. Lawrence angle, promptly disassociated itself from an opinion expressed by OPM Consultant C. W. Kellogg to the effect that no shortage was to be expected in electric power. In that connection OPM, taking notice of press reports of a Buffalo speech by Mr. Kellogg, said "this view could only have been expressed by Mr. Kellogg in his individual capacity, as it does not represent the position of the Office of Production Management."

Moreover, on June 10, William S. Knudsen, director general of OPM, announced that "OPM has formally approved the St. Lawrence waterway project as part of the all-out defense effort. The approval covered both waterway and the electric power phases of the project."

Finally, the publicity department of the Democratic National Committee has turned its hand to the build-up job. The latest of Publicity Director Charles Michelson's "Dispelling the Fog" columns which are distributed to newspapers was devoted to the project. The Michelson article appeared in the June 6 issue of the *Congressional Record* as an "extension of remarks" by Representative Gehrmann, Progressive of Wisconsin.

Meanwhile, the first post-message shot from the project's opponents was fired by Senator Bridges, Republican of New Hampshire, who stated it to be his judgment

that "the arguments which the President makes with regard to the St. Lawrence waterway are unsound." The senator went on to assert that the project would probably cost around a billion dollars and require six, seven, or eight years to complete. Also, Mr. Bridges cited recent utterances wherein W. L. Mackenzie King, prime minister of Canada, had "intimated that this is not the time to launch a great public-works project even under the guise of defense." Insofar as national defense is concerned, Senator Bridges has heard testimony of military experts "who have stated that if this country is ever invaded the best way for a foreign power to invade it would be down the valley of the St. Lawrence, splitting this country in two." He added that the proposed St. Lawrence waterway would offer "an excellent opportunity for invasion by building a paved highway to the heart of America."

Continuing, the senator from New Hampshire called the St. Lawrence "No. 1 on the list of unnecessary things," adding: "It would injure our port cities. It would throw tens of thousands of railroad workers out of employment. It would disrupt our transportation, and it would not work, because the St. Lawrence is frozen over for about four months of the year."

When the Presidential message was read in the House, Representative Wolcott, Republican of Michigan, arose to suggest that "the President has gone pretty far when he claims that he can justify the construction of a Great Lakes-St. Lawrence waterway project upon the grounds of national defense." While Mr. Wolcott did not want to comment at that time on the advisability of constructing the project, he did go on to express his thought that the matter "should be presented to Congress upon its merits, and should not be passed in consequence of any hysteria which we are undergoing at the present time with respect to the national defense."

On June 6, Representative Beiter, Democrat of New York, took the floor in the House and charged that the real purpose of the project's proponents is to get the seaway built. Among other opposition arguments Mr. Beiter said: "Regardless of the word pictures which have been made of this project; regardless of the stress which has been put upon the need for additional power which might be produced through the development of the St. Lawrence, when we lift the veil of propaganda which has been thrown around this stupid, stupendous scheme, the navigation feature of the project is revealed as its original and prime purpose. Fancied and fanciful savings have dangled before the eyes of the western farmer and industrialist as a panacea for low prices of the past. But nothing would be further from the fact . . . the American farmer would suffer rather than gain should the seaway become an actuality. The same would apply to industry and business generally in the Great Lakes area through destruction of their currently protected market."

Turning to the effect on upper New York state, Mr. Beiter predicted that if there were any advantage from the power project, it would be "overwhelmingly absorbed" in losses flowing from the seaway. He went on: "Proponents now, however, sidetrack the seaway feature and eagerly grasp at the national-defense label as the only possible bait through which they could gain enough interest from the American public and votes in the Congress to ratify the agreement now pending between this country and Canada. Let us not be misguided by this misnomer. The claim of national defense is simply too ridiculous to stand inspection."

Indicating how he believes with Senator Bridges that Canada's participation has been with reluctance, Mr. Beiter told his colleagues that Congress' job "is to refuse

to ratify this agreement with Canada which she is accepting against her will like a child taking a nasty dose." Also, he said that Congress has a duty to see that the American people "are not humbugged by certain misguided private interests and government bureaus forcing the seaway issue."

Endorsement of the project by Secretary of State Hull came in the form of a letter to Chairman Mansfield. Responding to the latter's request for his opinion, the Secretary of State said that he was "in full accord with the proposed legislation and I trust that the bill will receive prompt and favorable consideration."

Rail Stress Measurements of Counterbalancing Effects

(Continued from page 1053)

balanced locomotive No. 2517 as compared with the original J-S class Locomotive No. 2597.

The stresses under the remodeled J-A class locomotive, particularly under the main driver, are also quite significant. It is apparent that reduction in the counterweight on the main driver would be quite helpful.

Conclusion

The speeds for each locomotive at which the calculated stress in the base of 100-lb. RA-A rail reaches 30,000 lb. per sq. in. and the dynamic augment reaches 50 per cent of the nominal wheel load are as follows:

Locomotive No.	Class	Limited speed due to	
		Rail stress	Dynamic augment
2597	J-S	61	53
2565	J-A	83	62
2517	J-S (Rebalanced)	84	81
602	E-3 (Rebalanced)	95	91

The stress measurements have substantially verified the calculated stresses and dynamic augment and the limiting speeds for these locomotives.

* * *



Photo by "Sparky" Heubron

Concealed Front End Coupler "Gets the Air"

This front-end coupler on the new Diesel-electric locomotive recently put into service by the Southern Pacific to haul the "City of San Francisco" is usually concealed in service. When in use it is put into position with air. This occurs at switching points and on the Sacramento Division, where a steam helper locomotive is used to help haul the train over the Sierra Nevadas.

Car and Locomotive Equipment Developments

All-Service Freight Truck

The Buckeye All-Service freight truck was developed by The Buckeye Steel Castings Company, Columbus, Ohio, to meet the demands for trucks which could be operated with safety and minimum lading damage over a much greater range of speeds than heretofore. This truck was one of the twelve trucks entered in the A. A. R. riding tests which were run during the summer of 1939. It was one of the eight trucks which completed the tests. Of these, all except the Buckeye All-Service freight truck either had the springs go solid under heavy loads, or were slowed down during the course of the tests because of dangerous performance at high speeds.

The side frame of this truck is a beam type member in place of the truss type of frame used on conventional trucks. The bolster recess is on the top of the side frame, which permits the bolster to be lowered down on the side frame after the springs are installed. This type of side frame construction eliminates the possibility of interference between the top of the frame and the body bolster.

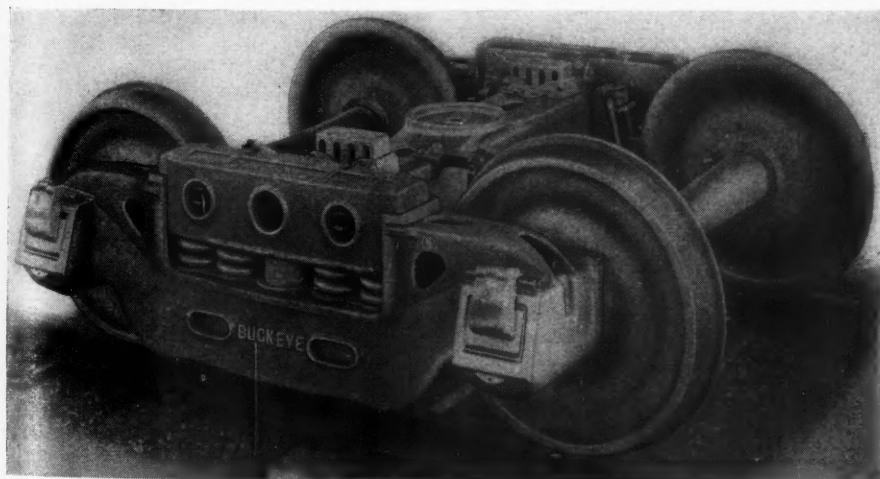
The ends of the bolster are widened and give this casting an H shape. These wide bolster ends provide ample room for springs between the bolster and the side frame, and also give a long base which serves to align the truck horizontally.

The spring group is composed of long-travel helical coils and a semi-elliptic

spring working in parallel. The coils are housed within the wide bolster ends and bear on the top wall of the side frame. The semi-elliptic spring is housed within the side frame, being entered therein through openings in the bottom wall adjacent to the journal boxes. The ends of the semi-elliptic spring contact seats on the bottom wall of the side frame, and the spring is loaded at the center by a circular plunger which passes through a circular opening in the top wall of the side frame and supports the bolster end. Brake-hanger brackets are cast integral with the side-frame members and brakes with the lever connector passing either through or under the bolster can be applied to the truck.

The truck is also arranged for use of a snubber spring in place of the semi-elliptic spring. The snubber spring is housed within the side frame and is supported on a snubber-spring seat on the bottom wall of the side frame. The snubber spring is loaded by the circular plunger in the same manner as the semi-elliptic spring.

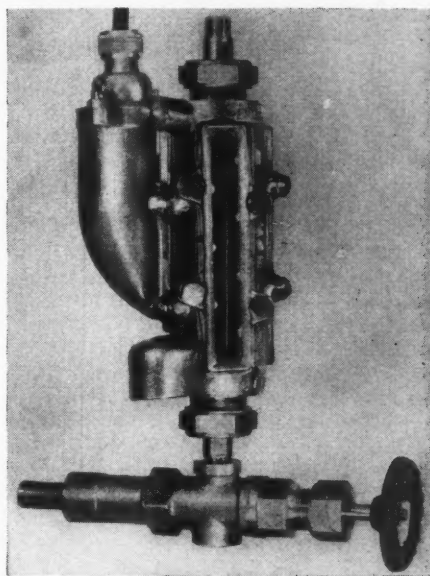
The Buckeye All-Service freight truck has been approved by the A. A. R., without qualification for use in interchange service on the basis of dynamic and static tests on the side frame and static tests on the bolster. In addition to preliminary road tests made during the development of this truck, and the road tests made by the A. A. R., one car set of these trucks has been in regular freight service on one railroad since October, 1939. Several railroads have specified this truck for new cars which are being built at the present time.



The Side Frame of the Buckeye All-Service Freight Truck Is a Beam Type Member and the Bolster Recess Is on the Top of the Side Frame

Protector for Tubular Water Glass

An improved locomotive tubular water-glass protector manufactured by the Sargent Company, Chicago, includes features giving added protection against personal



The Glass Panels in the Sargent Tubular Water-Glass Protector Can Be Cleaned and Replaced Without Disturbing The Steam Connections

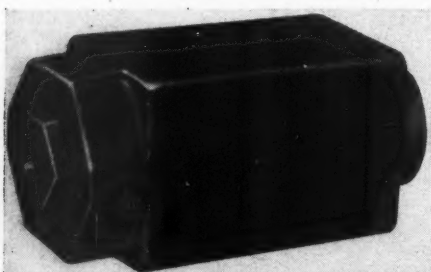
injuries and simplifying the renewal, cleaning and replacement of the glass panels in the body without removing the protector or disturbing its steam connections. The tubular glass is inserted in the protector before the unit is attached to the water-glass cocks. It has an ample escape passage at the base, threaded for a pipe connection, to divert escaping steam, water and tubular glass fragments below the cab deck in the event of a bursted tubular glass under pressure. However, if this passage becomes clogged from any cause, the entire structure will withstand pressure and prevent the release of any damaging elements within the cab.

A ball check at the top, normally open, permits air circulation within the protector to prevent misty glass panels, but closes automatically at the slightest accumulation of internal pressure. A small brass tube integral with the fittings enters each end

of the tubular glass to prevent the gasket from fouling the glass ends and producing a false water-level reading. The detachable bayonet-type lamp with insulated electric connections and socket illuminates the water level at all times without permitting light rays to escape and interfere with the engine crew's vision.

Draft Gear for Caboose Cars

The Miner Class A-28-XB draft gear has been developed especially for caboose applications to insure comfort to the train crews and at the same time supply adequate capacity and column strength when



Miner Class A-28-XB Draft Gear for Cabses

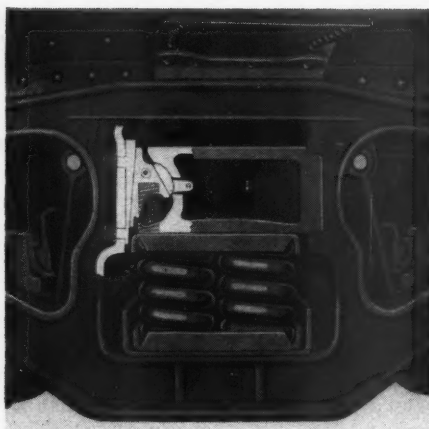
subjected to switching operations or pusher service. Initial live-spring resilience with the final portion of the gear travel developing high frictional resistance are characteristics of this draft gear. It is readily applied to standard draft-gear pockets and it may be used to replace old gears on existing equipment without change in the draft attachments or the car structures. The draft gear is made by W. H. Miner, Inc., Chicago.

Freight-Car Snubbing Unit

The Railway Truck Corporation, Chicago, after nearly two years of service tests, is offering a Snub-Up unit as a solution to the problem of destructive vertical and lateral vibration. The unit, as its name implies, snubs on the upward movement of the bolster springs, offering no resistance to the downward movement of the bolster and permitting the bolster springs to function as intended, i. e., to furnish a cushion for the downward impacts, but damping the release of the bolster springs and thus cushion the destructive effects of the release.

The Snub-Up unit does not depend on springs to develop its forces but creates the necessary forces through a four-degree slope on the chafing plate. Through this method the maximum work is done on the light and half loads. By protecting the light loads, the car structure is also shielded from the damaging effect of the bolster spring release.

In an energy absorption test at the A. A. R. laboratory the unit demonstrated its

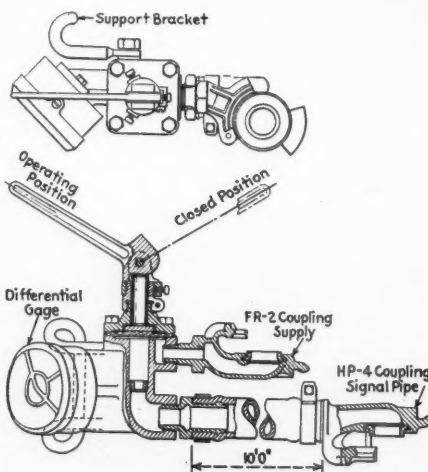


The Snub-Up Unit, as Its Name Implies, Snubs on the Upward Movement of the Bolster Spring

ability to absorb the energy input in the light-weight range, a necessary requisite in the protection of light and half loads. Actual road tests of about one and one-half years and covering over 100,000 miles with no maintenance cost to either the cars or the units indicate a life expectancy of eight to ten years on the average box car. Inspection of the equipment also shows that the units will perform two or three times the above mileage.

Car Signal Testing Device

The Westinghouse Air Brake Company, Wilmerding, Pa., has announced a device to facilitate the testing of car signal discharge valves and piping in accordance



Westinghouse Device for Testing Car Signal Discharge Valves and Piping

with the recently adopted A. A. R. test code. It consists of a body having a calibrated orifice choke, a lever type diaphragm cock, a duplex pressure gage, and two threaded outlets fitted with standard hose couplings. A yard air supply can be thus connected to a car signal pipe through

the cock and orifice. The two gage elements are connected to the ports on each side of the orifice so that the pressure differentials can be measured when air is vented from the signal pipe.

By referring the gage readings to a tabulation in the code, the rate of flow can be determined over a wide range of supply pressures, for the various specified tests. The body of the device has a hooked support, which permits it to be easily carried by hand, or attached to the end of a car while tests are in progress.

Insulating Tape and Pipe Covering

Glassbestos tape, for insulating steam or hot oil lines, is composed of four distinct layers—three of asbestos and one of highly resilient Fiberglas. It has a Fiberglas filled



Application of G-B Fiberglass Pipe Covering

asbestos tubing attached to a layer of asbestos cloth impregnated and coated on both sides with a waterproofing coating. This coating extends beyond the flat tube on one side forming a smooth lap when the tape is wrapped spirally upon the pipe and gives a seal which provides high efficiency. Glassbestos tape may be removed and reapplied repeatedly.

G-B pipe coverings are made from Fiberglass molded accurately to shape and bonded with an organic thermo-setting binder. They are furnished for pipe sizes from 1/2 in. to 6 in., either steel or copper pipe, in sections with the jacket overlapping at the ends and at the longitudinal joints. The jacket covering is either a heavy asbestos woven cloth impregnated with a waterproofing compound, which is highly resistant to abrasion, or a heavy asphaltum-impregnated asbestos paper.

G-B spiral pipe wrapping is used as a coordinating material for application to tees, elbows and abrupt bends. This material is furnished in 6-ft. lengths and is applied spirally and then finished with

heavy impregnated asbestos tape, 3 in. wide, applied spirally from the opposite direction.

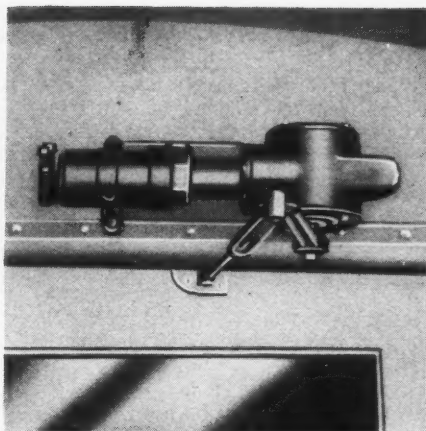
Glassbestos tape is a product of Raybestos-Manhattan and is sold exclusively by the Gustin-Bacon Manufacturing Company, Kansas City, Mo. Both the G-B pipe covering and spiral pipe wrapping are also marketed by the latter company.

End-Door Operator Has Reversing Feature

The end-door operator developed by the National Pneumatic Company, Rahway, N. J., has recently been improved by the addition of an automatic door reversing feature. With this feature, if a passenger exerts a slight pressure against any part of the door while it is closing, the door automatically re-opens. When it reaches its fully open position, the door automatically closes at its normal speed if the obstruction has been removed. Otherwise, it continues the cycle of opening and reclosing until the obstruction is removed, when the door closes completely.

The end-door operator is really a combined door opener, door closer and door check. A switch that closes its contacts when either the door knob, door handle or latch bar is actuated to open the door, completes an electric circuit to a magnet valve. The magnet valve immediately exhausts air pressure from the large end of the door operator, which then opens the door. The magnet-valve coil is automatically kept energized until the door reaches its fully open position. Then the circuit to the magnet valve is automatically opened, air pressure enters the large end of the door operator and the door closes.

In both the opening and closing movements of the door, an air cushion retards the speed of the door-operator piston near the end of its stroke, which effectively checks the door and prevents slamming. If



The National Pneumatic End-Door Operator Has an Automatic Door Reversing Feature

a slight pressure is exerted by a passenger against any part of the door while it is closing, air pressure builds up momentarily in an air switch, which then completes a circuit to the magnet valve, causing the end door operator to re-open the door. The end-door operator is now in service on a number of railroads.

Duryea Selective Spring Arrangements

Two arrangements of the Duryea cushion underframe featuring selective spring capacity, developed by the O. C. Duryea Corporation, New York, are shown in the illustrations. Fig. 1 shows one arrangement employing two cushion springs, that is, one spring between the bolster and coupler at each end of the car. The other arrangement has four springs placed in tandem with two springs located at each end of the car as shown in Fig. 2.

The arrangement shown in Fig. 1 oper-

ates as follows: When a force is applied to the coupler at one end, as in switching, etc., the coupler is permitted to travel $\frac{3}{4}$ in. within the sills, after which the sills move away from the direction the force is applied and compress both springs until there has been a 7-in. maximum movement of the sills. At this point, further movement of the sills is prevented by over-solid stops placed on the top and bottom of the movable center sills with the stops contacting the body-bolster center castings simultaneously.

With this arrangement, the coupler or destructive slack movement is limited to $\frac{3}{4}$ in. as compared with the total of $2\frac{3}{4}$ in. slack movement provided in conventional draft-gear construction. The long 7-in. travel gives great shock protection with low end force, thereby protecting the car body and its lading from destructive blows. The shock-absorption capacity of this arrangement is 36,000 ft. lb. The choice of the selective shock resistance is obtained by spacing of the follower lugs attached to the center sills so that the force is taken first by the spring next to the direction from which the force is applied. Then, after the sills have moved a predetermined distance of 2 in., for example, the spring at the opposite end is brought into action, after which both springs act in unison to resist the applied shock.

Where greater shock absorption capacity is desired, the arrangement with four springs placed in tandem, as shown in Fig. 2, is available. This arrangement has a capacity of 55,000 ft. lb. The selective feature of shock resistance, that is, a lower resistance initially and an increasing resistance for absorbing heavier shocks is also obtained by the spacing of the follower lugs. This permits the springs behind the bolsters to be brought into action when those in front of the bolsters have been compressed sufficiently to move the center sills a predetermined distance. When the springs behind the bolster are brought into action, all four springs act in unison.

The two-spring arrangement is particu-

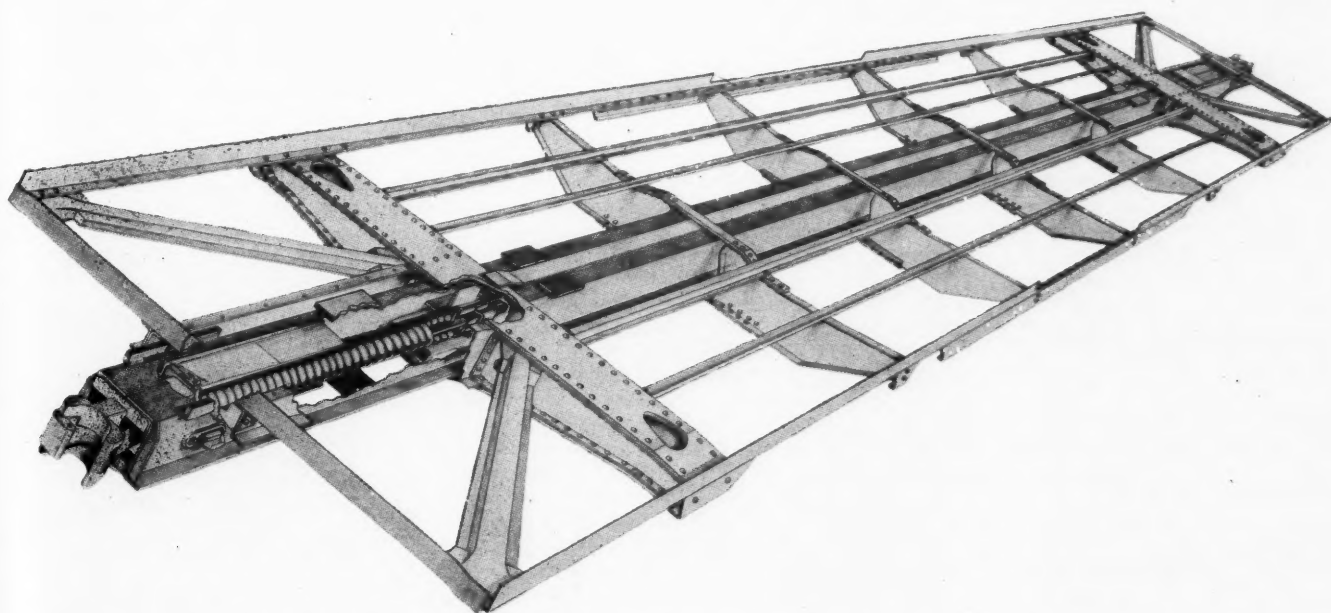


Fig. 1—Arrangement of Duryea Cushion Underframe With One Spring Between the Bolster and Coupler At Each End

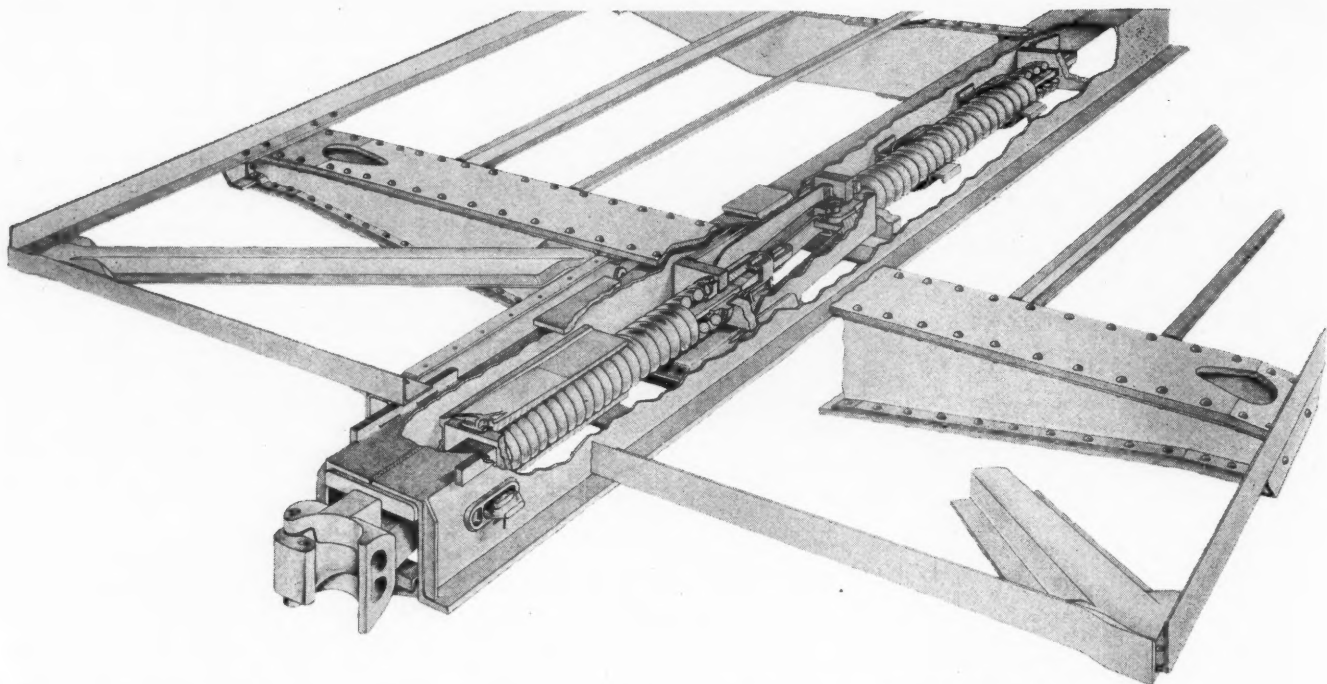


Fig. 2—Arrangement of Duryc Cushion Underframe With Two Springs Tandem Located at Each End

larly applicable to cars with light loads, such as box and refrigerator cars, while the four-spring tandem arrangement is designed for equipment carrying heavy loads. The selective feature of spring resistance provides a soft cushion movement for the empty car and a maximum of shock resistance when the cars are heavily loaded or subjected to severe end forces.

Recommended Snubber Coil Spring Groups

The American Steel Foundries, Chicago, are recommending Simplex snubber—coil spring groups for 40-, 50-, and 70-ton freight cars that contain less spring capacity than has been generally used. The snubbers of these groups are manufactured by this company, while the coil springs are either the 1936 or the 1915 standard A. A.

R. designs. The recommendations are based on a series of tests conducted under freight cars in actual service and some special investigations made with American Steel Foundries service laboratory cars. More than 23,000 miles of road tests were made using a special train of cars, including two all-steel A. A. R. standard 50-ton box cars containing equipment that indicated and recorded the detailed truck action at high operating speeds. Speeds of over 90 m. p. h. were reached consistently, with approximately 25 per cent of each run made at 85 m. p. h. or over.

The recommendations are given in the table and illustrations accompanying this article. The American Steel Foundries research indicates that these groups have sufficient capacity to prevent the development of damaging over-solid blows when the cars for which they are recommended are loaded to the maximum weight permitted in interchange. They also produce

a relatively soft action under lightly loaded and empty cars which protects light, fragile loadings and favorably affects car maintenance.

Fluorescent Light for Berths and Mirrors

Space is usually limited in berths and at mirrors of railway passenger cars where lighting fixtures are used. The T-12 fluorescent lamps, 15 inches long with ballasts and starters, require more space than is usually available. A fluorescent lighting fixture for these locations made by the Safety Car Heating and Lighting Company, New Haven, Conn., is 9½ in. long, 2⅞ in. high and 2½ in. deep, complete with switch, auxiliary ballast and starter, and requires no penetration into wall or partition. It uses a 6-watt, 9-in. fluorescent lamp made to operate on 110-volt alternating current or 60-volt direct current.

A two-button switch is furnished for operation of the fixture by the passenger. To light the fixture, a red button is pressed down causing the current to flow through the lamp electrodes, preheating the electrodes for quick starting when the red button is released. To prevent overheating the lamp electrodes when operating on direct current, if pressure on the red button is needlessly prolonged, a resistor is placed in series with the lamp filaments limiting the starting current to a value not in excess of running current, thus prolonging lamp life. This resistor is out of the circuit when the lamp is lighted. When operating on alternating current, there is sufficient ballast in the choke coil to prevent overheating of the lamp electrodes.

The external cover is removed by loosening two screws giving access for renewal of the fluorescent lamp. The lamp is

Recommended Simplex Snubber—A. A. R. Coil Spring Groups

Capacity of Car	40-Ton	50-Ton	70-Ton
Maximum Rail Weight Per Car Permitted in Interchange, lb.	136,000	169,000	210,000

1936 A. A. R. COILS

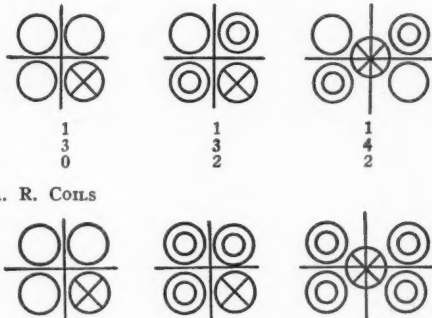
Recommended Simplex Snubber—
A. A. R. Coil Spring Groups

Simplex Unit Type Snubber	1	1	1
1936 A. A. R. Outer Coils	3	3	4
1936 A. A. R. Inner Coils	0	2	2

1915 A. A. R. COILS

Recommended Simplex Snubber—
A. A. R. Coil Spring Groups

Simplex Unit Type Snubber	1	1	1
1915 A. A. R. Outer Coils	3	3	4
1915 A. A. R. Inner Coils	0	3	4



protected against theft or meddlesome injury by a Safety 68 plastic shade. This shade also adds to the fixture's appearance and reduces glare without seriously affecting its illuminating output of more than

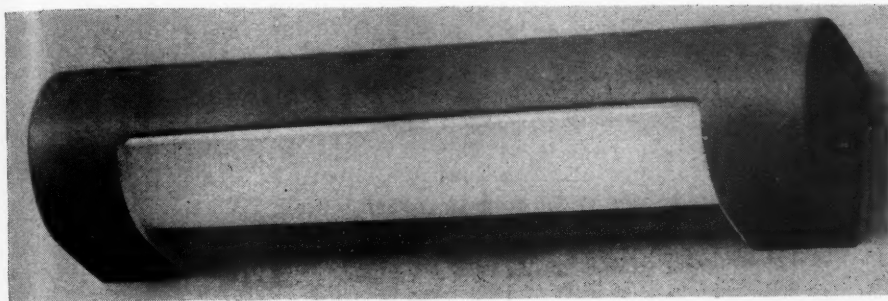
cushion automatically advances, thereby eliminating any tendency of the passenger to slide forward. The chair rotation is accomplished by a steel forging with a spring-operated compression guide moving in an

lucency is maintained which is important to the efficiency of each as a light transmitting material.

The use of aluminum for national defense has required the use of other materials for lighting fixtures. The snap-into-place plastic shades simplify the problems of fixture design so that sheet steel and other available materials become practical in lighting fixtures and troughs. This is a feature that may take on more importance with greater scarcity of materials.

Servicing and maintenance of lighting is also simplified by these plastic shades. Access to the inside of fixture or trough for replacing lamps or other servicing is merely a matter of compressing one side of the plastic shade out of contact with its holding groove or holding pin. No screw drivers or other tools are needed and the whole procedure is much quicker than with hinged covers.

The plastic used in most of these Safety shades has light transmission of about 80 per cent when of a thickness best suited



Safety Fluorescent Light for Berths and Mirrors

10-ft. candles for reading in bed, or for illuminating the face in front of the mirror.

The fixture is used as a reading lamp above pillows at the head of the berth. It is used as a make-up or shaving light when located at the sides of or above the mirror. It may also be used over doors and in passageways.

internal cam. The action of this mechanism is to draw the chair away from the wall before the actual revolving starts.

The semi-detachable individual backs are filled with moulded-rubber units shaped with comfortable head rolls and kidney supports. They can also be furnished with heat-treated springs, cushioned with felt, hair pad and cotton. The individual, saddle type cushions are filled with a moulded rubber unit or can be supplied with springs.

Re-Designed Coach Seat

To eliminate the use of aluminum arm rests and pedestals, the Heywood-Wakefield Company, Gardner, Mass., has adapted its rotating, reclining seat to construction with oval tubular-steel arm rests and pressed-steel pedestals. This change has been made to exclude from the design materials which have priority in defense industries.

The tubular back frame is shaped to conform with the natural body contour. By pressing the thumb knobs and exerting pressure on the backs, they can be reclined individually from 23 to 45 deg. When the thumb latches are again depressed, compression springs return the backs to normal position. As each back is reclined, the



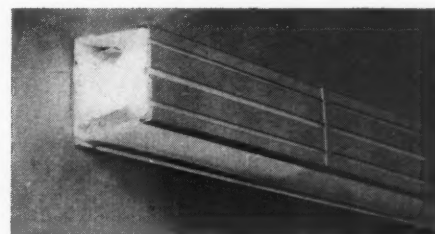
This Heywood-Wakefield Coach Seat Has Tubular-Steel Arm Rests and Pressed Steel Pedestals

Plastics in Railway Car Lighting

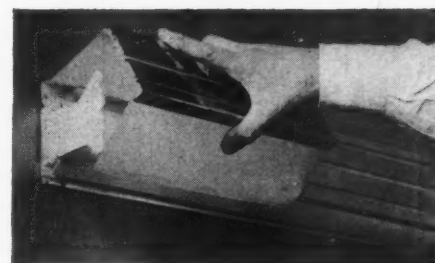
The fluorescent lamp has brought about many features of modern design in car lighting, one of which is the use of translucent plastic instead of glass. Plastics are usually thought of as nonbreakable when compared with glass but breakage is a relatively unimportant factor. Of much more importance is the simplified fixture made possible by the flexible nature of most plastics. The Safety Car Heating and Lighting Company, Inc., New Haven, Conn., has featured the flexible characteristics and the light transmitting properties of plastics in a wide variety of new and interesting car lighting developments. These include single lamp fixtures and continuous lighting troughs for both side-wall and ceiling applications.

The long luminous glass tube which distinguishes the fluorescent lamp suggests long and relatively narrow fixtures of a form generally classed as "streamlined" with extreme simplicity in surface treatment and with a minimum of lines. Hinged covers with protruding catches and other complications of line and form are entirely eliminated by the snap-into-place plastic shades used with all these Safety fluorescent fixtures.

Another development by Safety in plastics has been in the technique of forming the plastic shades. They range from nearly flat sheets through a variety of formed troughs and several elongated bowls into intricate curved shapes. In all of these a uniform standard of thickness and trans-



Part of a Side-Wall Lighting Trough With Safety Translucent Plastic Shade Having Front Chrome-Steel Bands

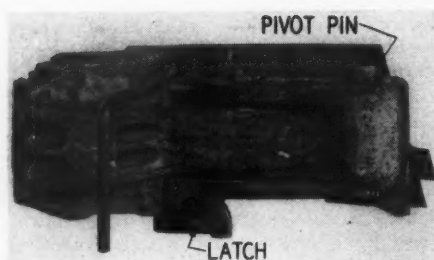


The Side-Wall Trough Shown Above With Part of the Shade Being Removed for Cleaning or Lamp Replacement

for strength and for diffusing the vision of lamps and sockets located behind the shade. An interesting method of preventing contrasts in luminous brightness of plastic shades in continuous troughs where the light source is interrupted at sockets is overlapping the ends of fluorescent lamps.

Retractable Pilot Coupler

For streamlining the pilots of steam and Diesel-electric passenger locomotives with exceptionally long overhang, or for pilots with an exceptionally flat slope where a relatively long shank coupler is desired, the Buckeye retractable coupler is designed



The Buckeye Retractable Coupler with Folding Shank

with an integral pilot door and a folding shank. In operating position, the shank is the equivalent of a long-shank pilot coupler and in retracted position the door opening is no larger in size than that necessary for a short-shank retractable pilot coupler. A manually operated latch on the bottom of the coupler positions the coupler and shank in the opening or retracted position. The coupler is made by the Buckeye Steel Castings Company, Columbus, Ohio.

Booster Supplies Constant D. C. Voltage

The T-12, 15-in. fluorescent lamp was developed for operation on 60-volt d. c. so that it could be used on cars equipped with 80-volt car lighting equipment without using conversion equipment. When it is

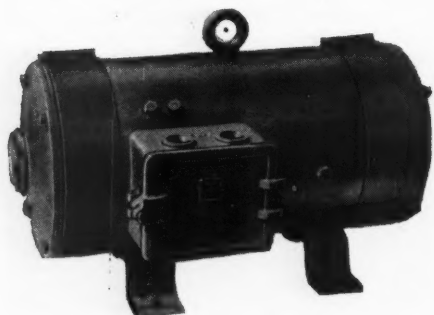


Fig. 1—This Safety D. C. Booster Will Supply A Lighting Load of 1,500 Watts at 60 Volts

desired to use these lamps on cars having 40-volt equipment, some means for raising the voltage must be provided. Several methods may be used: (1) A motor generator providing a constant d. c. voltage of 60; (2) a d. c. current booster set providing a constant voltage of 60 and (3)

a motor alternator furnishing 118 volts a. c. to operate the lamps on a. c. with a proper ballast.

A d. c. booster set large enough to supply a lighting load of 1,500 watts at 60 volts, a product of the Safety Car Heating and Lighting Company, Inc., New Haven, Conn., is shown in Fig. 1. It consists of a d. c. motor designed to run on voltages

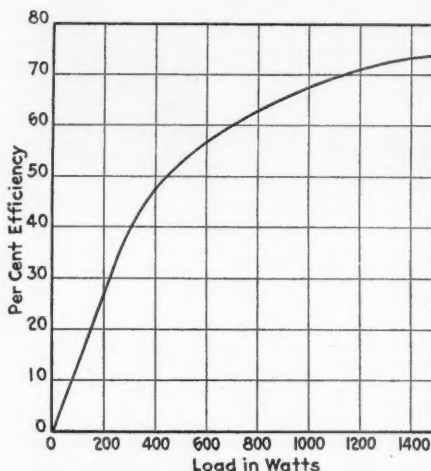


Fig. 3—Conversion Efficiency From Battery or Generator Voltage to 60 Volts When the Safety Booster Is Used

from 28 to 45 and a d. c. generator built into a single unit. Both armatures are mounted on a single shaft carried by two ball bearings.

The motor is shunt wound and is connected across the battery. The generator armature is connected in series with the load. Its polarity is such that the voltage generated is always added to the battery voltage to produce the higher voltage needed by the lamp. The generator has two sets of field coils. These are connected to oppose each other so that as the battery voltage increases the voltage generated by the booster decreases.

Inherent voltage regulation is thus secured. The regulation obtained is shown in Fig. 2. The characteristics are stable, an important detail in a device of this nature. The efficiency of conversion from battery or generator voltage to 60 volts when the booster is used is shown in Fig. 3. This machine is totally enclosed and operates at 2,500 r. p. m. The weight is 275 lb.

The method of starting is the same as that used with the motor alternator. The closing of any fluorescent lighting circuit

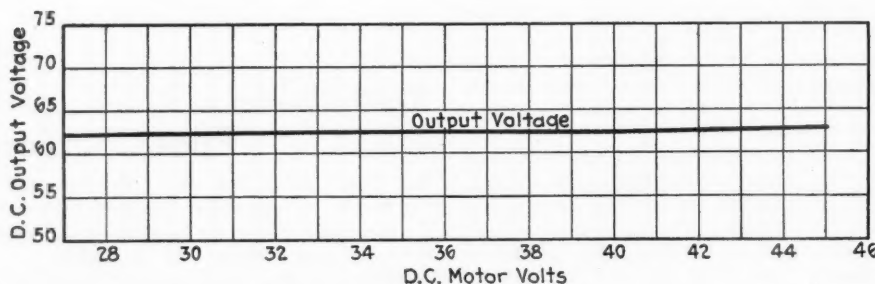


Fig. 2—Booster Voltage Regulation

energizes the coil on the starting contactor to start the set. Conversely, opening the last fluorescent lighting circuit shuts the set down.

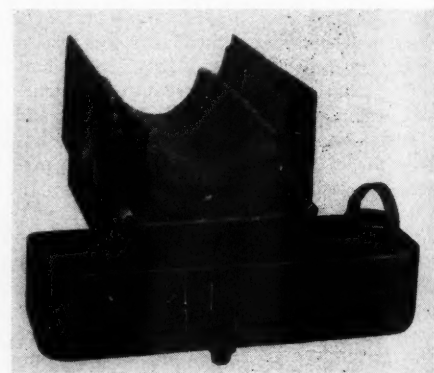
The machine can be wound to boost the battery voltage to any desired value. At present, the Safety Car Heating and Lighting Company, Inc., is prepared to supply machines for either 60- or 80-volt fluorescent lighting. For the 15-in. lamp, 60 volts are sufficient, while 80 volts are needed for the 18-in. lamps.

Truck Cellar and Lubricating Unit

The illustration shows an assembly of the Felpax engine-truck cellar and the Felpax wool-staple lubricating unit. A lower cellar with a drain plug for removing moisture is attached to the cast-steel truck cellar. An outside filler spout permits oil to be added without removing the cellar from the journal box. The cellar holds sufficient oil for the longest locomotive runs with the felt sections alone holding more than one quart of car oil.

Steel end plates and an oil seat retain the oil and exclude the grit from the cellar. As the lubricating unit will not glaze over since only the wool fibers contact the journal, the lubricators are not removed between quarterly inspections.

Felpax lubricators are also made for



Assembly of Felpax Engine Truck Cellar and Felpax Wool-Staple Lubricating Unit

trailer-truck journals in both the sub-cellar and solid-box types. A design for A. A. R. tender journal boxes is likewise available. These products are made by the Miller Felpax Company, Winona, Minn.

Welded Steel Box-Car Door

The Superior welded steel car door is built up of seven overlapping panels shaped into box girders. These girders are welded to the door-frame members to form a strong rigid door of integral construction. High-tensile alloy steel is used to permit a reduction in weight and for greater resistance to corrosion. A saving in weight of 15 per



The Superior Welded Steel Car Door

cent is claimed for a typical box-car application over other types of doors.

The interiors of the box-girder members are spray painted and sealed against the entrance of moisture. In addition, the design eliminates all water pockets in the door. The door operates on ball bearings and can be opened and closed with one hand. It is a development of the Superior Car Door Company, Chicago.

Radiator-Type Aftercooler

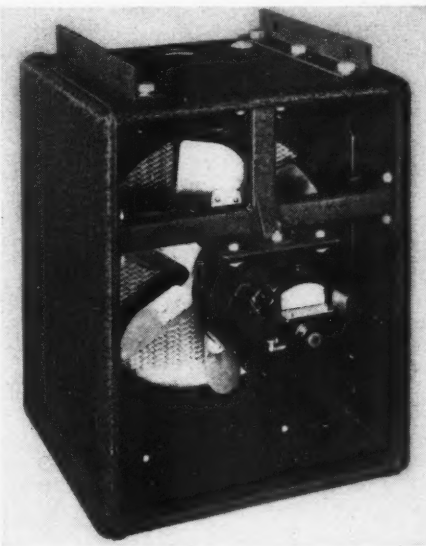
To assure dry air for brake systems, the Westinghouse Air Brake Company, Wilmerding, Pa., has developed a radiator-type aftercooler that is interposed between the first and second main reservoirs. It consolidates radiating pipe into a compact, self-contained unit that can be installed at any convenient point on a locomotive away from boiler radiation and in the path of air currents. Its cooling effect is better than the conventional type of series radiating pipe, and its frost carrying capacity is

much greater. Throttling orifices insure a substantially uniform distribution of air flow through the tubes, and a twisted stainless-steel ribbon in each tube acts as a baffle to force air into contact with the walls.

An automatic drain valve attached to the outlet ejects condensation each time the governor operates to start or stop the compressor. Another drain valve, operated in parallel with that on the aftercooler, is recommended for the first main reservoir.

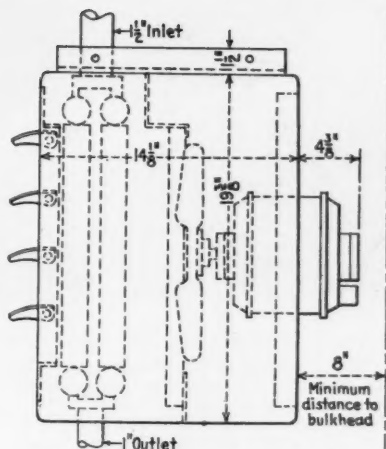
Baggage-Car Unit Heater

The Transportation Controls Division of the Fulton Sylphon Company, Philadelphia, Pa., is supplying special unit heaters for



Two Fulton Sylphon Unit Heaters Will Take Care of the Heating Requirements of a Baggage Car

baggage cars and the baggage sections of PB cars. Ordinarily, two heater units are used for full-size baggage cars while one unit is usually installed in the baggage



Side Elevation of the Fulton Sylphon Unit Heater

section of a PB car. The heaters are installed above the head level in the end of the car and louvers in the heater permit the direction of the warm air to be changed as desired.

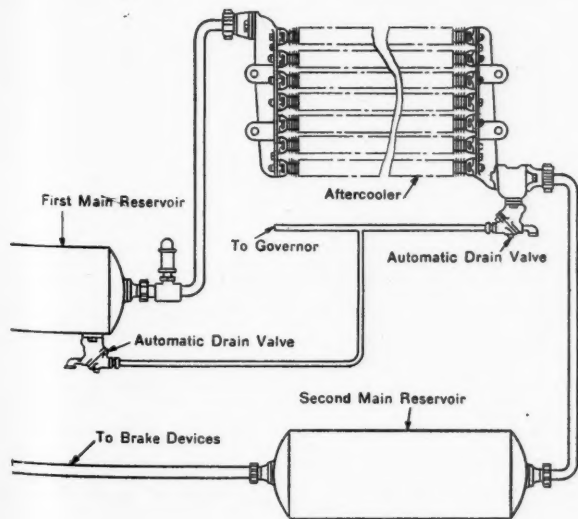
The heaters are connected to the steam heat system through a reducing valve which lowers the steam pressure to 8 or 10 lb. per sq. in. These heaters are available in three sizes with capacities of 48,000, 54,000 and 60,000 B. t. u. per hr., delivered at the rate of 685, 660 and 745 c. f. m., respectively. The B. t. u. rating is based on a steam pressure of 2 lb. per sq. in. at an air temperature of 60 deg. F. The fan is driven by a $\frac{1}{2}$ -hp. motor running at 1,140 r. p. m. and can be furnished for operation on either 64 or 32 volts d. c. The heaters can be controlled either manually or automatically. Over-all dimensions of the unit heaters are 15 $\frac{7}{8}$ in. by 20 $\frac{3}{4}$ in. by 18 $\frac{1}{2}$ in.

Advantages claimed for the use of unit heaters in baggage cars are the increase in available storage space, a reduction in both weight and installation costs and a decrease in damage claims on luggage subjected to intense heat when the heating surfaces are mounted on the side walls.

Chill Control In Car Wheels

Researches into the manufacturing processes employed in producing chilled-iron car wheels have developed a technique that results in a clearly defined chill band in the tread and flange section that comes in contact with the rail. The amount of chill in wheels has always been covered by rigid specifications, so as to be well within the limits of service requirements for the hard wearing surface that is characteristic of chilled iron, but modifications in design and heat treatment gradually led to a dispersion of the mottle that separates the chilled portion of the tread from the gray iron backing.

The accompanying photograph shows the fracture of a tested wheel under the revised process and illustrates the nice degree of control that is now exercised to insure that every wheel will have a uniform band of chill of the required depth, and still



The Westinghouse Aftercooler Installation Between the First and Second Main Air Reservoirs



A Technique Has Been Developed in Producing Chilled Iron Car Wheels to Insure a Uniform Band of Chill in Every Wheel

leave a desirable soft gray iron backing across the flange and tread section to resist impacts and enhance the factor of safety. The process is a development of the Association of Manufacturers of Chilled Car Wheels, Chicago.

Unit Type C-S Superheater

The C-S unit type superheater, made by the J. S. Coffin, Jr., Company, Englewood, N. J., is designed for a continuous downward flow of steam from its entrance into the dry pipe through the headers and units into the cylinder. It is a system which is substantially self draining and free from all intricate cored passages and pipe bends. The steam travels once in each direction to the unit and there are no obstructions to the steam flow which might reduce pressure at the cylinders. Also, there are no external obstructions on the units to collect cinders and resist the gas flow. A reduction in smokebox length is made possible by the compact arrangement of head-

ers, C-S throttle and steam pipe connections to the cylinder. The manifolds on each end of the unit are of heat-resisting forged steel and there are no bends or machined joints on any of the units.

These units have 77 per cent of their surface subject to counterflow heat transfer from gas to steam. All C-S superheater units for a given class of locomotives are identical and completely interchangeable with each other. This same design of unit is also standard and interchangeable for all classes of locomotives having large flues of the same length.

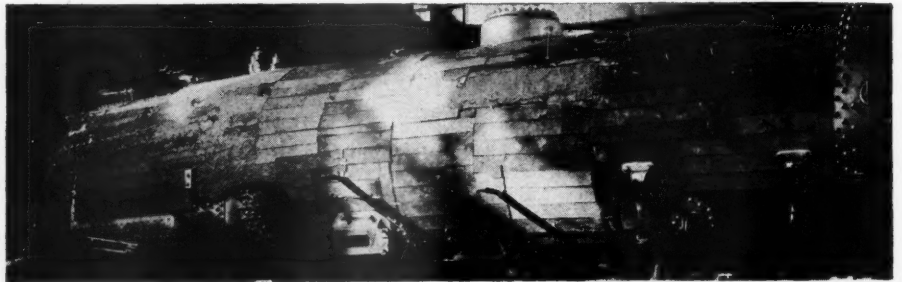
Fiberglas Boiler Lagging

Fiberglas locomotive lagging consists of minute glass fibers bonded together with a thermo-setting binder. It is furnished

and is easy to apply. Its extremely high thermal efficiency results in materially reducing operating costs. The lagging is a product of the Owens-Corning Fiberglas Corporation and is sold exclusively to the railroad industry by the Gustin-Bacon Manufacturing Company, Kansas City, Mo.

Elesco H-A Superheater Units

Realizing the need for increasing the superheat on thousands of old locomotives equipped with the Type A superheater, The Superheater Company, New York, during 1930 started a research program to further study the unit design for use with large flues. Since that time it has designed and tested many unit shapes. As a result, a unit was developed, classified as H-A, which met the need for increased super-

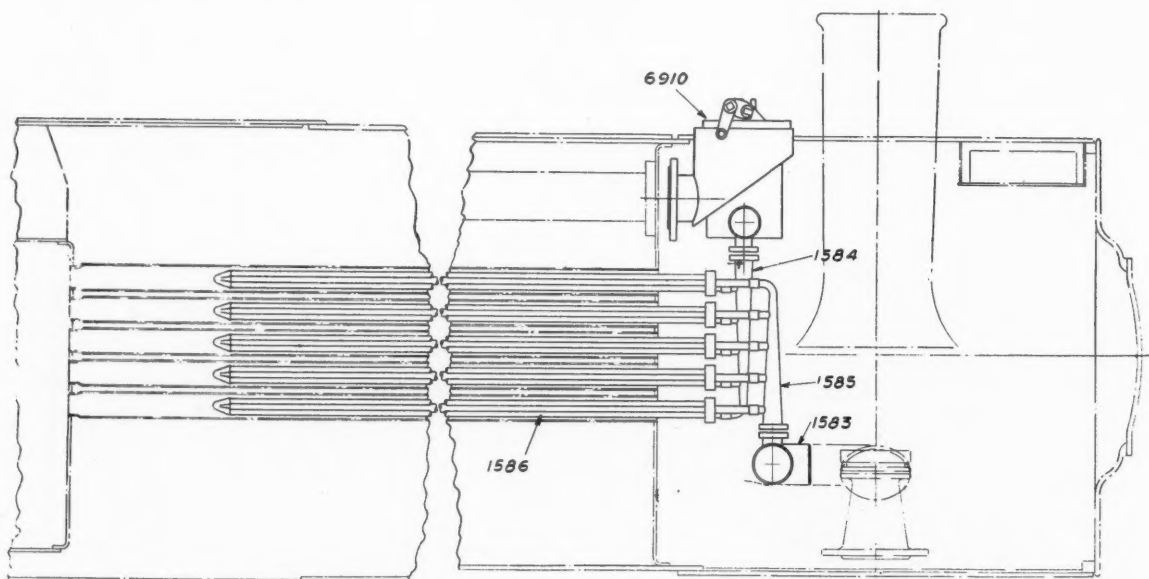


Locomotive Boiler Insulated With Fiberglas Lagging

in thicknesses from $\frac{3}{4}$ in. to 4 in. in $\frac{1}{4}$ -in. increments and in standard flat blocks, 6 in. by 36 in.

This lagging is light in weight, structurally strong, withstands mechanical shock

heat without change of flue sheet layout, header, steam pipes or drafting. It will be noted from the illustration that it is a combination of a concentric section of unit with a Type A design of superheater unit



1583—Bottom header
1584—Saturated Steam sub-header
1585—Superheated steam sub-header

1586—Unit Complete
6910—C-S throttle valve with top header integral

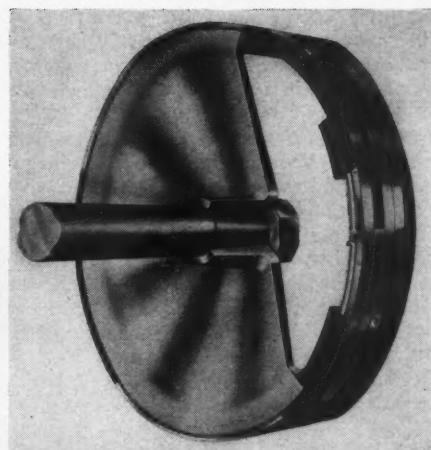
C-S Superheater Unit and Header Arrangement with C-S Front End Throttle—It may Also Be Applied with a Standard Dome Throttle

and provides approximately 33 per cent more superheating surface.

Saturated steam flows through this concentric section contraflow to the flow of gases and returns through a 1½-in. standard unit tube through the center of the concentric section. This type of unit pro-

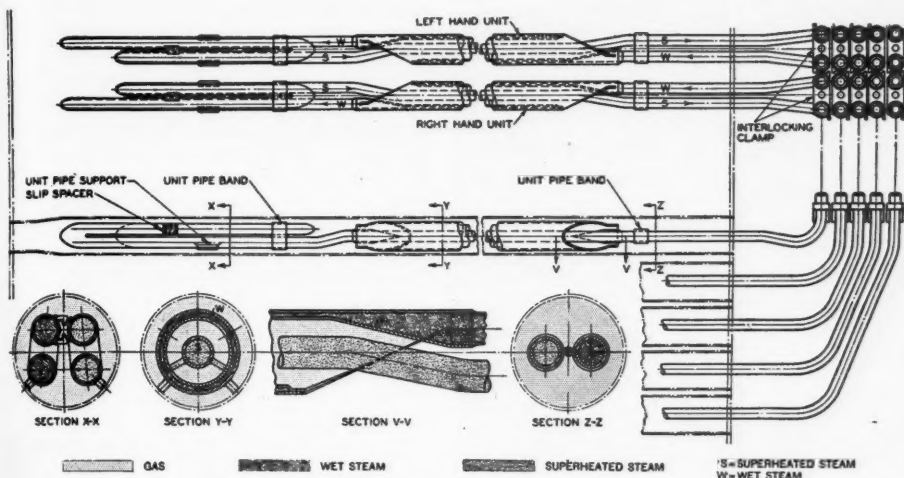
elliptic springs to provide more resilient spring action and to reduce the number of broken elliptic springs. In addition, four groups of coil springs are equally spaced with relation to the center of the truck to produce a more stable truck.

The centering device may be designed



Locomotive Finished Materials Company's Lightweight Piston With Staggered Cast-Iron and Bronze Ring Segments

Finished Materials Company, Atchison, Kans., is recommending the use of the staggered-ring arrangement with its lightweight pistons. The use of both cast-iron rings and bronze rings is said to result in a lower application cost and a lower packing ring cost per mile.



Details of Elesco H-A Superheater Units

vides an average increase of 50 deg. F. in steam temperatures with a 30-35 deg. F. drop in smokebox temperatures. The increase in superheat results in approximately a 5 per cent increase in cylinder efficiency, with a corresponding saving in fuel and water or an increase in power.

The H-A type of superheater unit was designed especially for old locomotives now equipped with standard Type A units.

for either constant or variable resistance and consists of two rollers acting in combination with inclined top and bottom bearing surfaces. This arrangement provides a simple and effective means for controlling the lateral movement of the truck and locomotive.

Four-Wheel Engine Truck

The General Steel Castings Corporation, Granite City, Ill., has introduced a new four-wheel engine truck embodying a combination coil-elliptic spring arrangement and a new roller-type centering device.

This truck utilizes four groups of coil springs working together with two semi-

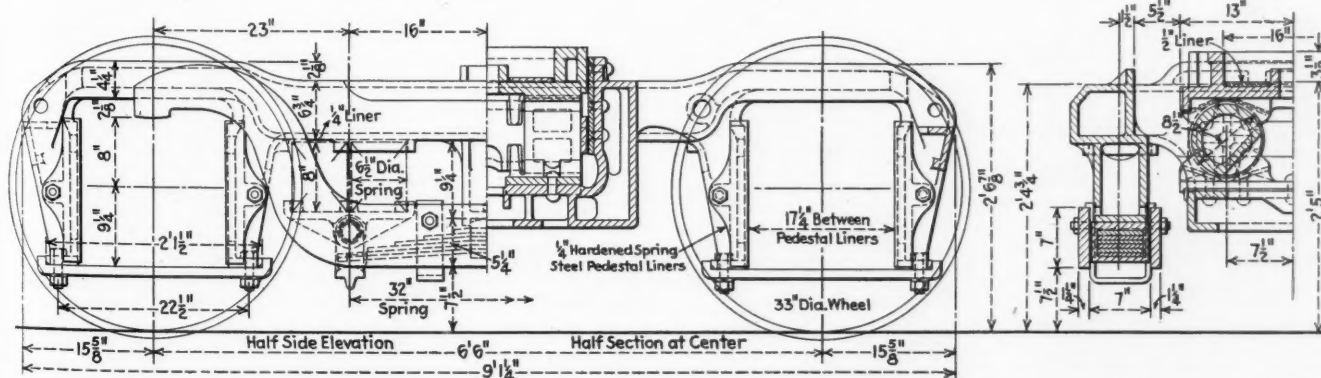
Bronze and Cast-Iron Packing Rings

Performance tests have shown that the use of bronze packing rings has increased the service life of cylinder bushings and the mileage between ring renewals. However, recent developments have indicated that cast-iron rings staggered between bronze segments give packing ring mileage and cylinder-bushing wear comparable to that obtained from applications of bronze rings alone. For this reason, the Locomotive

Motor Alternator For Fluorescent Lighting

To provide power with the permissible voltage and frequency limits required by fluorescent lamps when using these auxiliaries on railway cars, the Type MG-15 motor alternator has been designed by the Safety Car Heating and Lighting Company, Inc., New Haven, Conn. With it the voltage is held between 110 and 125 volts and the frequency from 58 to 62 cycles. It can be used on cars equipped with either lead or Edison batteries.

The MG-15 motor alternator satisfies all requirements for operation with all types of auxiliaries, and as the voltage and frequency are held within close limits its use with all types of auxiliaries is recommended. This motor alternator is rated at 118 volts, and 1,200 watts. It is a complete self-contained unit with no external ac-

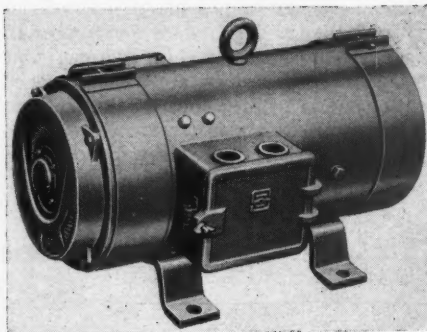


Details of the General Steel Castings Four-Wheel Engine-Truck with Coil-Elliptic Springs and Roller Centering Device Designed for Either Constant or Variable Resistance

cessories except the starting relay. The d. c. motor armature and the a. c. generator armature are mounted on a common shaft carried in a rolled-steel frame on ball bearings of liberal dimensions. The motor has four poles, while the alternator has two poles. Normal speed is 3,600 r. p. m.

Speed and frequency regulation throughout the range of d. c. voltages normally found in car lighting are obtained through the combination of two means of control, each performing a separate and distinct function. Compensating resistors correct for speed changes caused by changes in voltage impressed on the motor and for changes in temperature. A transformer in series with the load corrects for speed changes caused by changes in the load.

The characteristic of the compensating resistors used is such that an increase in voltage impressed across them is accompa-



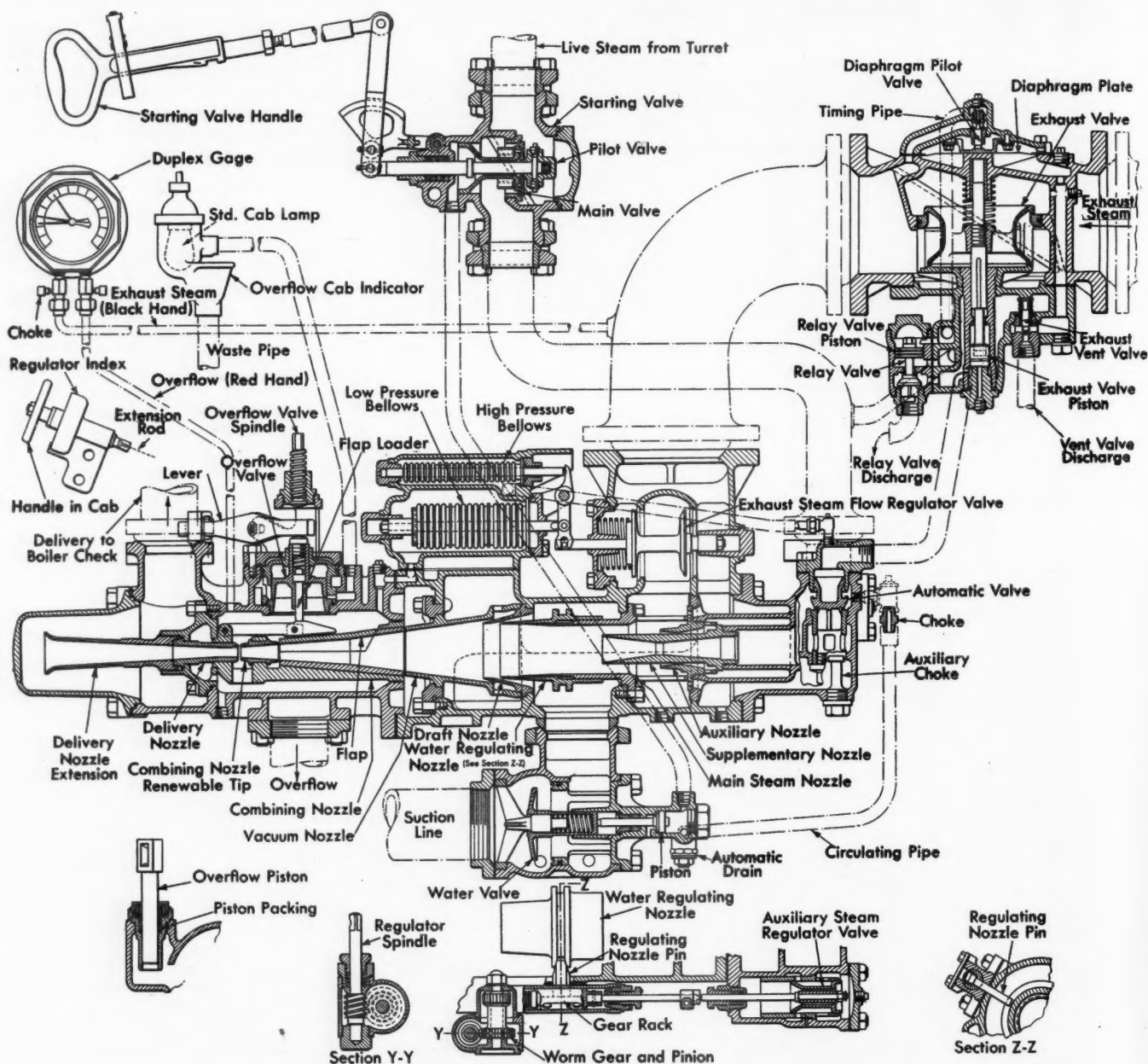
Safety Type MG-15 Motor Alternator

nied by a decrease in resistance. The rate of this inverse characteristic has been so proportioned that in combination with the

resistance of the shunt field with which they are in series, voltage changes on the motor automatically change the resistance of the shunt field circuit so that the field current required to hold the speed constant will be automatically maintained.

The compensating resistors are rugged in construction and impervious to moisture and dirt. They are mounted as complete units on each of the four arms at the alternator end of the machine. These resistors serve to hold the speed constant irrespective of voltage changes. They do not correct for a change in motor speed due to changes in load on the motor caused by changes in the output of the alternator. To correct the motor speed for change in load, a series transformer is placed in the alternator line. The secondary of this transformer is connected to a small rectifier. The direct current from the rectifier

* * * *



Details of the Elesco Type T Exhaust Steam Injector Made By the Superheater Company, New York. The Body Design Includes Automatic Features Which Previously Were Separate Parts Bolted to the Body. By Relocation of the Exhaust Elbow, the Length of the Body Has Been Shortened Which Facilitates Application. A Small Auxiliary Cold-Water Pump Is Furnished to Supply Water to the Injector When It Is Located in A Non-Lifting Position

passes through auxiliary field coils on the poles of the motor. This current produces a field which is counter to that produced by the main motor fields.

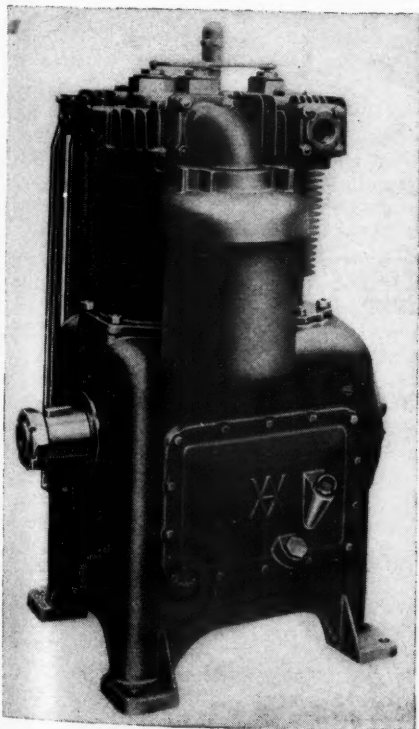
As load is added to the alternator, the current in the rectifier circuit increases in proportion. Since the field coils energized through the rectifier are in opposition to the main motor field, the total effective motor field is weakened as the a. c. load is increased, holding the motor speed constant under all conditions of load.

The series transformer and rectifier are located in the control box which is similar in construction to and mounted on the side of the machine opposite to the terminal box. A series field on the motor insures quick starting with low starting current. All of the operating parts are thus contained within the machine itself. For starting, a single contactor is energized when any one of the fluorescent lighting circuit switches is closed.

Air Compressor for Diesel Locomotives

The Westinghouse Air Brake Company, Wilmerding, Pa., has developed an air compressor, Type 2-CD, designed particularly for use on Diesel-electric road locomotives, where space is limited and service exacting. It is a compact, two-cylinder, air-cooled compressor of the compound type with intercooler, having a displacement of 92 c. f. m. at 600 r. p. m., and arranged for direct or motor drive through a flexible coupling.

The reversible crankshaft is balanced by counter-weights at each end, and its two



Westinghouse Air Compressor Designed Particularly for Use On Diesel-Electric Road Locomotives



Douglas Fir Plywood Is Used for the Exterior Siding of This Car

main supports are radial ball bearings. The cylinders with deep cooling fins are mounted above the crankcase, which has covered side openings large enough to permit easy access to the interior. All valves are of the double washer type, assembled in easily replaceable units. A positive, controlled, pressure lubricating system forces oil to the crank-pin and wrist-pin bearings. Excess throw-off oil lubricates the ball bearings. The compressor inlet is protected against the entrance of dirt by an efficient cart-ridge-type suction filter.

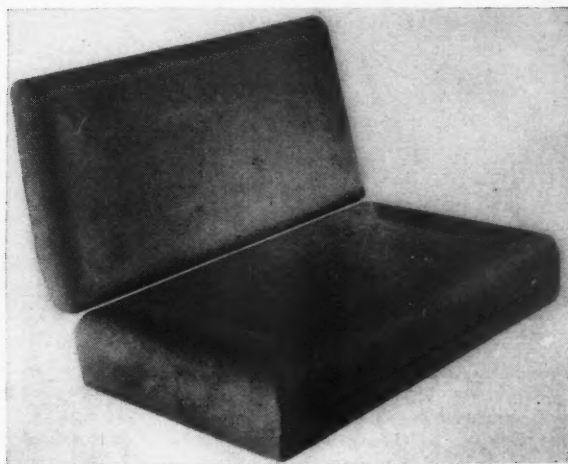
Car Siding and Roofs of Plywood

Already tested by usage in thousands of box cars for ceilings and linings and for refrigerator-car interiors, Douglas-fir plywood was put to work for railroads in additional ways during 1940. New railroad

applications of plywood, announced by the Dougals Fir Plywood Association, Tacoma, Wash., include exterior siding and roofs of freight and refrigerator cars. For these latter jobs, where the panels are constantly exposed to the weather, waterproof type plywood is utilized.

When plywood first came into prominence as a material for box-car construction five years ago, it was applied to ceilings to prevent condensation and thus eliminate damage claims. Since then, a number of railroads have standardized on plywood ceilings for steel-roofed box cars. Later, it was used for the interior walls of the cars to protect the shipments. It was found that the plywood panels are shock-proof and split-proof, qualities contributing to lower maintenance cost. One railroad has reported almost no repair cost for interior plywood walls on 1,000 cars over a four-year period. Other advantages of plywood are its great strength per pound, low cost of installing the big sheets, and protection

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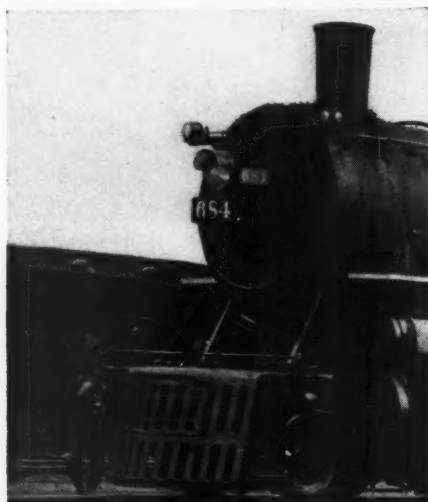
Dunlopillo Seat and Back Cushions Made By the Dunlop Tire and Rubber Company, Buffalo, N. Y., for Absorbing Vibrations in Locomotive Cab Seats

from dirt and cinders with minimum footage of joints.

In all, there now are 15,000 to 20,000 railroad freight cars ceiled, lined, roofed or sided with fir plywood; some cars are all plywood with the exception of steel framing and wood floors.

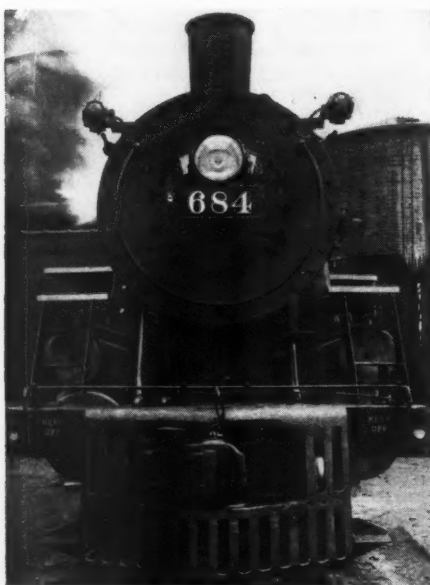
Cast-Steel Deflecting Pilot

With the present day high speeds at which both passenger and freight trains are operated, protection from collision with trucks,



The Commonwealth Pilot in Non-Operating Position Presents a Surface Free of Obstructions

automobiles and other large objects on the track has become increasingly important. General Steel Castings Corporation, Granite City, Ill., has contributed toward such protection through the development of a



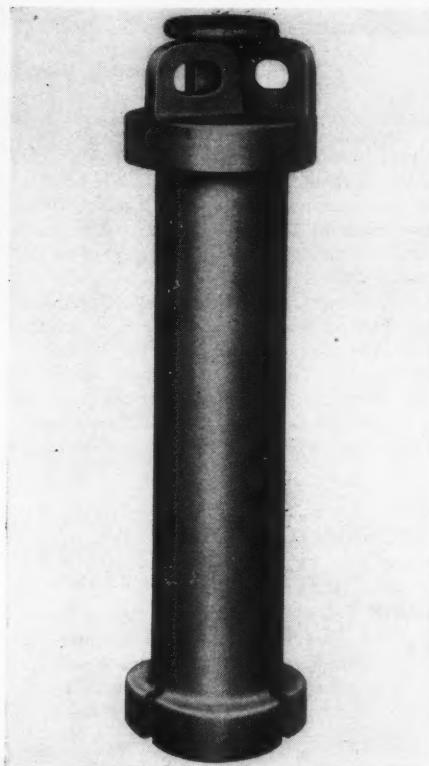
The Commonwealth Pilot With Swing-Type Coupler in Operating Position

cast-steel deflecting pilot with retractable coupler.

The coupler swings horizontally into a pocket in the pilot face, thus presenting a surface free from projections. The pilot is designed of cast steel with sufficient strength to deflect objects from its path. A closure plate is provided with the coupler which automatically covers the opening when the coupler is not in use. This pilot is in service on several roads where it is said to have eliminated expensive derailments due to grade crossing accidents.

Passenger-Car Safety Locking Pin

The Class L-4 Safety locking pin developed by W. H. Miner, Inc., Chicago, locks securely the passenger-car body to the truck in accordance with A. A. R. specifications. It is considerably stronger than previous



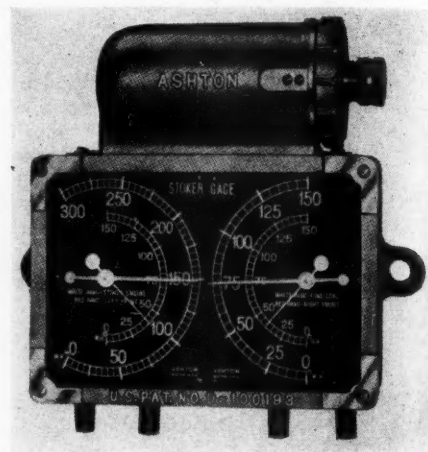
Miner Class L-4 Safety Locking Pin Holds the Passenger Car Body Securely to the Truck

designs because of its increased flange or shoulder bearing area and the special heat-treated steel from which it is made. The pin guards against separation of the car body from the trucks in the event of a wreck or abnormal impacts and makes telescoping practically impossible. As it may be the means of saving lives and avoiding damage to railroad equipment, the strength afforded by this improved locking pin is highly desirable.

The pin may be applied from the top of the bolster, inside the car, or from the bottom of the truck bolster when the inside application is not practicable. It may be removed quickly and easily.

Locomotive Stoker Gage

The Ashton locomotive stoker gage is a combination of two duplex gages, ordinarily used in stoker service, mounted in a heavy rectangular dust-proof case with side



The Ashton Stoker Gage Is a Combination of Two Duplex Gages Mounted in One Case

lugs. Combining the two gages in one case reduces the space required for this equipment in locomotive cabs. The side lugs permit the use of substantial bolts or studs for mounting instead of the small bolts which are commonly used with circular duplex gages. The gage is equipped with an illuminating attachment cast integral with the face ring for lighting the dials. This gage is similar in construction to the Ashton quadruplex airbrake gage which has been in use for many years. It is a product of the Ashton Valve Company, Cambridge, Mass.

THE BOOK OF FACTUAL INFORMATION published annually by the British Railways Press Office with the title "Facts About the British Railways"—corresponding to the "Year Book of Railroad Information" published in this country by the Committee on Public Relations of the Eastern Railroads—this year has been entirely revamped to emphasize the role of the railroads in wartime. The usual statistics and charts on revenues and traffic have been greatly reduced in extent and in their place are published short articles on subjects such as war-time traffic, "raid spotting," salvage campaigns, air raid precautions, problems of blackout and lighting and typical cases of employees' courage in protecting property from fire and explosions.

A number of striking examples of quick repair work on damaged right-of-way are presented. It is pointed out that in most cases extensive bomb damage on important lines has been repaired within 12 hours of occurrence. Traveling cranes are kept under steam continuously and heavy timbers for trestles and girders are in readiness on flat cars for immediate conveyance to damaged sites.

NEWS

Steel for Cars Gets Leon's O.K.

Civilian materials allocator
puts cars at top of preferred
list—OPM may act too

As the railroad equipment industry was waiting this week for the issuance by the Office of Production Management of national-defense allocations of steel for car construction there came from Leon Henderson, administrator of the Office of Price Administration and Civilian Supply, a "civilian allocation program" giving materials necessary for the construction and repair of freight cars preference, after government contracts, over material and equipment going into any "other civilian" use. Meanwhile it was stated at OPM that OPM's contemplated action was still coming; and it was learned later in the week that some allocations of plates for carbuilding had been made, but it was not expected that they would be made public until reported to the steel industry committee.

It was said at OPM that there is not necessarily any conflict between the Henderson action and that planned by the OPM Materials Branch. It was explained that OPACS was giving preference on steel for cars "over other civilian requirements"; that it was not telling mills what orders they should take. The OPACS order, it was further pointed out, might have the effect of rationing existing steel supplies and it might cause a diversion of such supplies to railway equipment. On the other hand, OPM's Materials Branch deals with orders.

OPACS' June 10 announcement stated that Administrator Henderson had moved "to meet the impending shortage in railroad freight cars"; and his program (covering material and equipment necessary for construction or repair of railroad, mine, and industrial freight cars) provides that "all deliveries of equipment necessary for the construction and repair of freight cars shall be given preference over all material and equipment going into any other civilian use, subject only to a prior preference on deliveries for all such material and equipment as may be required under contracts with the United States or any department or agency thereof."

The effect of this process, the OPACS statement went on, "will be to assure freight car builders of first call on steel and other required materials and equipment after military and other government needs are taken care of." The action was taken under OPACS' authority "to allo-

cate residual supplies of scarce materials among competing civilian demands after needs of the armament program are satisfied." In announcing the program Mr. Henderson stated that "the railroads are faced during the peak loading this fall with the heaviest volume of freight traffic in recent years as result of the combined impetus of armament and civilian activity."

"Because of this fact," the OPACS administrator added, "the railroads are now undertaking to expand their supply of rolling stock. They had approximately 73,000 cars on order May 1 which should be built this year. In order to accomplish this and to avoid a serious rail transportation bottleneck it is essential that construction of these freight cars and repair of bad order cars be speeded by every means possible. The civilian allocation program for freight cars will affect particularly the distribution of available supplies of steel and its products since they constitute a major part of the materials required in freight car construction. It is estimated that an average of 20 tons of steel are required for each freight car built. Completion this year of all the freight cars on order May 1 would require around 1,400,000 tons of steel."

OPM's expected action in the freight car situation will comprise a follow-through from its June 5 announcement that it is taking steps to curtail continuous-mill production of sheet and strip steel and to use the capacity to turn out plates for shipbuilding, railway car building and other urgent defense purposes. The same announcement stated that W. A. Hauck, OPM steel consultant, was then visiting sheet and strip mills of several steel companies "to determine the appropriate measures may be taken." It was further stated that some of the mills, already equipped to turn out plate as well as sheet and strip, would be able to begin plate production "in the very near future."

In the latter connection it has been estimated that those flexible mills are now in a position to produce plates covering car and ship requirements at the rate of 1,500,000 tons annually; while other continuous mills could produce an additional 1,000,000 tons—although considerable time might be required to equip them. With existing annual plate capacity between 5,500,000 and 6,000,000 tons, these additions could boost it to approximately 8,000,000 tons. As noted in the *Railway Age* of May 10, the Association of American Railroads presentation to OPM showed 1941 requirements for "plates, shapes, bars, sheets, billets, etc." to be 1,923,262 tons of the total of 4,914,556 tons for all requirements listed.

AB&C Boosts Pay To Avert Strike

Emergency Board negotiates
agreement to raise operating
pay by 17½ P. C.

Some 325 train-and-yard service employees of the 640-mi. Atlanta, Birmingham & Coast will receive increases in basic wages averaging about 17½ per cent by reason of an agreement reached between the carrier and the brotherhoods in the course of negotiations supervised by an emergency board, appointed by President Roosevelt on May 16 to avert a strike called for that date. The emergency board this week submitted a report to the President announcing settlement of the dispute through compromise of the original positions taken by both the carrier and the unions.

The latter sought so-called "standard" basic wages; the former refused any increase. The average 17½ per cent rise in basic rate of pay agreed upon brings the wages of enginemen and trainmen up to 81 per cent of the standard paid on practically all Class I roads in the country. Members of the emergency board—none of whom had served previously on such panels—were: (Chairman) Houston Thompson, Washington (D. C.), attorney; Brigadier-General Hamilton S. Hawkins, retired; and Dr. George W. Stocking of the University of Texas.

Much more important than the points in the dispute itself, in the emergency board's opinion, is the "fundamental issue" whether either party to such a dispute is right in refusing arbitration. Pointing out that in this case, the management of the road refused the offer of arbitration, the report declares that while the Railway Labor Act does not require compulsory arbitration, "the machinery of the act will eventually become ineffective" if the arbitration step in the orderly procedure of settling disputes "is to be circumvented continuously by a refusal of one or the other of the parties to accept it." This position is identical to that taken in a report submitted to the President also this week by another emergency board investigating a controversy involving ore dock employees at lake ports, summarized elsewhere in this issue.

Like its fellow board in the ore-handlers' case, the board in the A. B. & C. case questions whether appointment of a presidential emergency body—instead of voluntary arbitration—in disputes of this character does not threaten the efficiency of the

(Continued on page 1092)

Emergency Board Warns RR Unions

Tells them that spirit of Ry. Labor Act requires them to arbitrate disputes

Situations justifying the creation of emergency boards "may occur when one or more great principles are involved," but the Railway Labor Act's arbitration provisions should be utilized when mediation fails to settle ordinary wage disputes, according to a report submitted to President Roosevelt by the emergency board appointed recently to investigate the controversy involving ore dock employees of four railroads at Duluth, Minn., and other upper lake ports. As noted in the *Railway Age* of June 7, the emergency board turned its hand to mediation and brought about a settlement which will give the employees, who were demanding a 12½-cents-per-hour raise, an increase of 10 cents per hour—from 62½ cents to 72½ cents.

In this case the employees, represented by the Brotherhood of Railway Clerks, rejected arbitration which would have been an acceptable procedure to the railroads—the Duluth, Missabe & Iron Range, Chicago & North Western, Great Northern, and Minneapolis, St. Paul & Sault Ste. Marie. As the emergency board pointed out there was a difference of 2½ cents per hour between the parties. In the early stages of the dispute the carriers offered a five-cent increase and the employee representatives agreed to accept 7½ cents if made before the season should open in April. Later the carriers offered the 7½ cents, but it was at that time unacceptable to the employees who demanded 10 cents. Members of the emergency board were G. Stanleigh Arnold, attorney of San Francisco, Calif., (chairman), Arthur E. Whittemore, attorney of Boston, Mass., and William H. Tschappat, retired major general and former chief of army ordnance.

"The appointment of an emergency board in this case should never have been made necessary," said the report. "The fact that it was necessary indicates a situation which this Board feels should be seriously considered by management and organization alike before it is manifested in other cases in which the outcome may be less fortunate." Elaborating on the foregoing the Board referred to the history of the Railway Labor Act which emerged in final form with all provisions permissive "except for the following single obligation: 'It shall be the duty of all carriers, their officers, agents, and employees to exert every reasonable effort to make and maintain agreements concerning rates of pay, rules and working conditions and to settle all disputes—in order to avoid any interruption to interstate commerce growing out of any dispute between the carrier and the employees thereof.'"

The Board recognized that the Act "has almost interruptedly achieved the results which were promised for it"; and thus found it "inconceivable" that the dispute before it could not have been settled speedily if all negotiators were free to act. But the representative of the Brotherhood

"felt that his hands were tied by the instructions of the employees, and that he could do nothing less than insist upon the establishment of a minimum 10-cent increase." Yet, the report added, an emergency board "obviously cannot make a finding of the exact amount by which wages should be adjusted. It was not anticipated by Congress that any question of this kind would reach an emergency board, for it had been pointed out to Congress that the board could, in any such contingency, give little help."

Supporting the latter statement the Board cited utterances of labor leaders at hearings on the bill which became the Railway Labor Act. Then it said: "That Congress was led to expect that arbitration, and not emergency boards, would be the final method of settling cases like the present one, is made clear by the testimony before the Congressional committees hitherto quoted. The same representative (of railroad labor) further stated: 'I do not think you will have very many disputes that will ever go to emergency boards. I hope I will not see any, but I do not want to be too optimistic.'"

"While there is no legal obligation to submit to arbitration in any case, it is the view of this Board that repeated failure to do so in such cases as this must eventually result in defeating the purpose of the law," the report said in closing. "Especially at a time of national emergency it is of highest importance that all available means be utilized for the peaceful settlement of labor disputes to the end that direct action and coercion or the appearance of coercion be avoided. The Railway Labor Act provides these means as its record shows. Its continued success depends upon the consistent exercise of co-operative effort in the spirit of the law and not a merely literal compliance with its terms . . .

"Our object is to recall and to emphasize again to both the carriers and the million and more men in railway employment (who, with their predecessors and officers, in genuine cooperation with the carriers, have made the Railway Labor Act for more than fifteen years a signal success) the unique character of that Act. It is not an ordinary statute, prescribing their legal rights as against each other. It is a grant of self-government, good for as long as it accomplishes its primary object,—the uninterrupted flow of interstate commerce—and revokable when it fails to obtain that object."

Club Meeting

The Transportation Club of Rochester (N. Y.) Chamber of Commerce will hold its 22nd annual outing at Manitou Beach, N. Y., on June 19.

Vacations with Pay

National Mediation Board meetings with labor and management representatives on the demand of 14 non-operating unions for vacations with pay were in recess this week while the Board awaited an answer from the parties to its suggestion that the controversy be submitted to arbitration. The parties were scheduled to meet again with the Board on June 16.

Pipe Line Bill Is By in House

Some legislators are perturbed at effect measure will have on post-war r. r. jobs

After adding minor amendments the House, on June 5, passed, without a record vote, H. R. 4816, the bill introduced by Representative Cole, Democrat of Maryland, which would give broad powers both to government agencies and to private companies to condemn private land for the construction of oil and gasoline pipe lines. Details of the measure were outlined in the *Railway Age* of May 24, page 962.

After refusing in committee of the whole by a vote of 70 to 29 to accept an amendment by Representative Voorhis, Democrat of California, which would have prevented any new pipe line to be constructed under the bill from being owned by any producing oil company, the House adopted an amendment offered by Representative Halleck, Republican of Indiana, which would require the government to dispose of any pipe lines which it may construct one year after the termination of the present unlimited national emergency.

At the very outset of the extensive debate on the measure, Representative Schulte, Democrat of Indiana, asked Mr. Cole what the effects of his bill would be on the lives of railroad men when peace is declared and the country returns to normal. Mr. Cole did not know what the resultant effects on railroad labor would be as a result of the construction of new pipe lines, but he did inform the House that he had before him a letter addressed by the Association of American Railroads to the Office of Production Management which concluded with the following statement:

"I may say, in connection with the attitude of the southeastern railroads toward the construction of new pipe lines, that I am advised that at a meeting of these roads held in Washington today, such steps were taken as make it certain that the railroads will advocate no policies which will tend to obstruct the program of national defense."

Questioned off the floor, Mr. Cole said that the letter referred to was written by J. J. Pelley, president of the A. A. R., to Ralph Budd, transportation member of the National Defense Advisory Commission, and was in reply to one written by Mr. Budd in which the latter asked Mr. Pelley to discuss the subject of pipe lines. Mr. Cole also said that he had received a similar letter from E. E. Norris, president of the Southern.

Although Mr. Cole was not specific in regard to the attitude of railroad labor towards the measure, he did tell the House that both labor and management "have taken a splendid attitude towards this measure." Mr. Halleck also had something to say regarding the attitude of labor towards the bill. He had never understood that labor was against the bill, at least insofar as it has to do with the necessities of national defense. In advocating the

adoption of his one-year limitation, Mr. Halleck declared that "I happen to know, however, from some very recent conversations I have had, that railroad labor is not interested in having this line operated indefinitely by the government in competition with their jobs and in such manner as might likely be calculated to diminish their jobs and employment."

Turning to the question of the adequacy of oil transportation and the ability of the railroads to handle the oil which formerly had been transported by the 50 tankers recently transferred to Great Britain, Representative Wolverton, Republican of New Jersey, told the House that in his opinion, if all the tankers were taken out of service it would not be possible, today, for the railroads, with the increased demands upon them, to provide for the transportation of oil in the Atlantic seaboard states.

At another juncture in the debate Representative White, Democrat of Idaho, wanted to know whether "the railroads with their tank cars and the truck lines are capable of meeting this emergency and moving oil domestically in the United States?" Representative Coffee, Democrat of Washington, assured him that they were. "The Railroad Executives Association," continued Mr. Coffee, "has announced several times that they were capable of transporting all the necessary oil needed in the 48 states of the Union. The 21 standard railroad brotherhoods have expressed themselves as in opposition to the bill. Competing forms of transportation, such as the trucking interests, are in opposition to the bill. They feel likewise that they are in a position, through their tank car fleets, on public highways, to be able to take care of the necessary shipments of oil in interstate commerce."

Mr. White wanted to call Mr. Coffee's attention to the fact that "down along the Columbia River between Portland, Oreg., and Astoria there are thousands of tank cars standing there rusting out, waiting to be used." "You will find them in Indiana, Ohio, Pennsylvania, and everywhere, standing idle today," he concluded.

During the debate the question arose as to the adequacy of the present Interstate Commerce Commission regulation of pipe lines. Representative Izac, Democrat of California, had complained that the large oil companies who own the pipe lines make the minimum tenders so large that the smaller producers cannot utilize the pipe lines. Representative Lea, Democrat of California and chairman of the House interstate and foreign commerce committee, conceded that there is a deficiency in the regulation of the pipe lines at the present time but urged that "there is an administrative remedy that should be applied to correct that condition." Mr. Lea went on to say that the commission is investigating the subject now with the idea of more strict control. Asked by Mr. Izac as to whether the pipe lines are now operated as common carriers, Mr. Lea replied that they are, but he would not say that they are satisfactorily regulated. "The law now possibly authorizes better regulation," he asserted. "If not, it should be appropriately changed."

On the floor of the Senate on June 9 Senator Gillette, Democrat of Iowa, criti-

cized Attorney General Jackson for having said that he would turn over to Petroleum Coordinator Ickes for a decision all anti-trust cases now pending in which the government is seeking to divorce the ownership of pipe lines from the various major oil companies. Although the cases have been filed for some time, Senator Gillette asserted that the government was trying to settle them out of court and that due to the present threatened oil shortage caused by transfer of tankers to England, Mr. Jackson would submit all contemplated legal action first to Mr. Ickes to ascertain the latter's views as petroleum coordinator.

Senator Gillette also deplored the fact that a major oil company executive, Ralph K. Davies, director and senior vice-president of the Standard Oil Company of California, who this week was appointed deputy coordinator of petroleum, would pass upon contemplated legal action against the major oil companies. It was Mr. Gillette's contention that President Roosevelt never intended that Mr. Ickes should pass upon the legal phases of the petroleum problem which rightly belong to the Department of Justice.

Bill to Provide Workmen's Compensation for Motor Carrier Employees

Representative Edelstein, Democrat of New York, has introduced H. R. 4943 "to provide workmen's compensation for employees of carriers engaged in interstate transportation by motor vehicles."

Status of Public Stock Yards

The Interstate Commerce Commission, in an order by Commissioner Splawn, has postponed from July 10 to August 10 the effective date of its recent order in the Ex Parte 127 proceeding which involves the status of public stock yard companies. The commission's decision in this case was reviewed in the *Railway Age* of May 17, page 857.

Bill Would Require Registration of Labor Organizations

Representative Hoffman, Republican of Michigan, has introduced H. R. 5015 "to provide for the registration of labor organizations having members engaged in interstate or foreign commerce and to impose duties upon such labor organizations and the members thereof and to impose liability for unlawful acts upon such organizations and the members thereof."

Moving the I. C. C.

The Interstate Commerce Commission was among several government agencies which recently received requests from the Bureau of the Budget for information as to the amount of Washington office space that might be made available if all or part of their activities were moved elsewhere. The Budget Bureau's letter was not made public, but it was learned that the commission is compiling data for a reply.

May Employment 11.05 Per Cent Above 1940

Railroad employment increased another 4.05 per cent—from 1,080,896 to 1,124,719—during the one-month period from

mid-April to mid-May, while the May total was 11.05 per cent above that for May, 1940, according to the Interstate Commerce Commission's compilation based on preliminary reports. The index number, based on the 1935-1939 monthly average as 100 and corrected for seasonal variation, stood at 108.9 for May as compared with April's 106.8 and May, 1940's 98.1.

May employment in all groups was above that of May, 1940, the largest increases being the rises of 14.11 per cent in the maintenance of equipment and stores group, 14.09 per cent in the maintenance of way and structures group, and 11.68 per cent in the train and engine service group. As compared with the previous month there was one decline, the .07 per cent decrease in the group embracing transportation employees other than train, engine and yard. Among the other groups the largest increase over April was the 14.73 per cent rise in the maintenance of way and structures group.

Erie Runs Fan Trip

The Erie will operate a 411-mi. trip for railroad enthusiasts out of New York over the New York, Wyoming and Jefferson divisions on Sunday, June 22. The special train leaving from Jersey City, N. J., will proceed via the main line and Graham low-grade line to Susquehanna, Pa., where a one-hour stop will be made for picture taking. Return will be over the Wyoming and Jefferson divisions via Carbondale, Pa., Jessup, Rock junction, Lackawaxen and main line to Jersey City.

Hearing on Manual Block Rules

A pre-hearing and conference concerning the rules, standards and instructions for the installation, maintenance and repair of manual block signal systems, as proposed by the Interstate Commerce Commission, has been scheduled for July 2 in the offices of the Commission at Washington, D. C. Objections to some of the proposed rules, and a request for a hearing, were explained in an article on page 1025 of the *Railway Age* for June 7.

"Broadway Limited" to Have Premiere Showing

"Broadway Limited," a motion picture showing a number of action scenes of the Pennsylvania's extra-fare train between New York and Chicago, will have its premiere New York showing at the Globe Theatre, Broadway and Forty-sixth street on June 14. Much of the action of the film takes place on board the Broadway—photographed both along the actual right-of-way and using replicas of interiors and exteriors on Hollywood studio property.

K. F. Nystrom Receives Doctorate From Marquette University

Karl F. Nystrom, mechanical assistant to chief operating officer, Chicago, Milwaukee, St. Paul & Pacific, was awarded an honorary degree of Doctor of Engineering by Marquette University, Milwaukee, Wis., on June 11. Mr. Nystrom was cited, among other things, for his development work in the design and construction of modern passenger train equipment. Coming to the Milwaukee in 1922 as an engineer of car

design he revolutionized shop techniques on the road and designed and built in company shops light-weight rolling stock for the "Hiawatha" trains.

Representation of Employees

Results of recent elections in representation-of-employees cases have been announced by the National Mediation Board. Power house employees and railway shop laborers employed by the Washington Terminal Company have chosen the International Brotherhood of Firemen, Oilers, Helpers, Round House and Railway Shop Laborers, operating through the Railway Employees Department, American Federation of Labor; while boilermakers, their helpers and apprentices employed by the same company voted to retain the Brotherhood of Railroad Shop Crafts of America as their collective-bargaining agent.

On the Elgin, Joliet & Eastern, the Brotherhood of Railroad Trainmen won the right to represent yardmasters; while on the Chicago, Burlington & Quincy, the Brotherhood of Maintenance of Way Employees won the right to extend its jurisdiction to cover stock yard laborers.

New Through Train Between Cleveland and Baltimore

A new through day train between Baltimore, Md., and Cleveland, Ohio, via Washington, D. C., and Pittsburgh, Pa., has been inaugurated by the Baltimore & Ohio, Pittsburgh & Lake Erie and Erie under the name "The Washingtonian," trains Nos. 21 and 22. While travel between these points was formerly possible by through sleeping cars, this is the first train to keep its identity and offer through coach service. Equipment includes air-conditioned reclining-seat coaches and Pullman parlor-lounge-dining car. The Washingtonian leaves Baltimore at 8:55 a. m., arriving in Cleveland at 8:40 p. m. Southbound it leaves Cleveland at 9 a. m., arriving in Baltimore at 8:52 p. m.

Cleveland C. of C. Helps Out on Freight Movement

The Cleveland (Ohio) Chamber of Commerce has published an eight-page pamphlet entitled "Keep 'Em Rolling" as its contribution to the current campaign for efficient utilization of transportation facilities. The booklet outlines for both users of transportation services and for the carriers themselves ways and means of expediting freight movement. Shippers are urged to unload cars and trucks promptly; to load cars to maximum capacity; to place orders for cars directly with the railroad having track connection with their plants, etc. Shippers are also urged to "choose that agency which is best fitted for the particular job" in selecting various means of transportation.

Government Requisitions All Southern Pacific Vessels

The Southern Pacific has been directed by the United States Maritime Commission to turn over to the government its entire fleet of ten vessels for national defense purposes, according to an announcement from that agency on June 10. This fleet of cargo ships, says the statement from the

Arthur Curtiss James Dies

The death of Arthur Curtiss James, in New York on June 4 as reported in the *Railway Age* of June 7, brings to a close the career of the greatest railroad financier of the last decade. Mr. James' career has been the most colorful since that of James J. Hill and reflects a heritage of the latter's objectives. He was born in New York on June 1, 1867, and matured while his father was closely associated with Mr. Hill in the development of the West. Mr. James' entrance into the railroad field occurred in 1901 when the railroad properties of the Phelps Dodge Corporation were merged to form the El Paso & Southwestern. It was his dream to expand them into a transcontinental railroad to California. This intention was abandoned in 1924 when the Southern Pacific purchased the E. P. & S. W. for \$28,000,000 of Southern Pacific capital stock and \$29,000,000 of bonds. In the meantime he had inherited his father's interests in the Great Northern, the Northern Pacific and the Chicago, Burlington & Quincy.

As a result of the sale of the El Paso, Mr. James was able to acquire a substantial interest in the Western Pacific in 1926 and again undertake the development of a transcontinental line to California. In furtherance of his objective of increasing the importance of the Western Pacific as a transcontinental line, the original outlet with the Denver & Rio Grande Western at Salt Lake was augmented in November, 1931, when he drove the last spike linking extensions of the Great Northern and the Western Pacific at Bieber, Cal.

On December 31, 1939, Mr. James resigned as chairman of the board and a director of the Western Pacific as one of a series of resignations from other companies, owing to his desire to lighten the burden of business activities. At the time of his death he was still a member of the executive committee and a director of the Great Northern; the Chicago, Burlington & Quincy and the Colorado & Southern, a director of the Phelps Dodge Corporation and a director or trustee of numerous financial and educational institutions.

As a tribute to Mr. James, all trains and operations on the Western Pacific were stopped for one minute at 7 a. m. Pacific time on June 7, simultaneous with the beginning of funeral services at 11 a. m. in New York City.

commission, for many years operated as the Morgan Line, has been engaged in coastwise trade from New York and Baltimore, Md., to Galveston, Tex., and Houston.

It was further pointed out that the vessels are being acquired in pursuance of

the provisions of the President's letter of April 30 calling for a pool of ships to be used to aid the democracies.

The vessels to be acquired are the El Almirante, El Capitan, El Coston, El Estero, El Isleo, El Lago, El Mundo, El Occidente, El Oceano, and El Oriente, with a total deadweight of 66,590 tons.

President Signs R. F. C. Bill

President Roosevelt has signed S. 1438, the recently-enacted bill to give the Reconstruction Finance Corporation new and sweeping powers to finance the national defense program. Congressional action was completed on June 5 when the conference report was adopted in both the Senate and House.

As noted in the *Railway Age* of June 7, the final version of the measure, under which the R. F. C. would get authority to build and equip a railroad, contained that provision which stipulates that nothing in the act shall be construed to authorize the R. F. C. to take any action, directly or indirectly, with respect to the St. Lawrence seaway, the Florida Ship Canal, the Tennessee-Tombigbee waterway, the Passamaquoddy project, or a Nicaragua canal.

The Canadian Roads in April

In April the Canadian Pacific had net operating revenues totaling \$3,149,165, as compared with \$1,946,079 last year. Gross was \$16,654,790 and expenses were \$13,505,625, compared with \$12,043,923 and \$10,097,844 last year. For the four months, gross has amounted to \$62,067,450, expenses to \$50,397,879, and operating net to \$11,669,571—representing increases, respectively, of \$14,386,007, \$9,965,004 and \$4,421,003 over last year.

On the Canadian National April gross was \$24,648,899, expenses \$17,849,537 and operating net \$6,799,362. Last year's comparable figures were \$17,666,164, \$15,977,183 and \$1,688,981. For the four months operating revenues were \$89,347,366, expenses \$71,856,438 and operating net \$17,490,928. Last year, these figures read, respectively, \$71,040,279, \$63,913,337 and \$7,126,942.

D. & H. Sues National Railway Adjustment Board Members

The Delaware & Hudson has filed suit and had summonses served this week on the 10 members of Division 1 of the National Railroad Adjustment Board, returnable in the U. S. district court for the northern district of Illinois, before Judge Igoe. The D. & H. is seeking by this means to compel Royal A. Stone, referee, and the members of Division 1 to make formal awards on the proposals offered in D. & H. cases that were suddenly withdrawn by labor representatives about a year ago. The D. & H. is seeking to have the court direct the defendants, including R. A. Stone, to continue their original hearings on the disputes and enter of record "the permanent denial and dismissal with prejudice" in each dispute or accept the previous decisions of Referee Stone. The railway also seeks a temporary injunction to prevent Division 1 from taking action on the alleged "re-hash" cases now being filed in lots of five.

Originally, 170 disputes were submitted to the board, and, following the deadlock between the five carrier and five labor members of Division 1, R. A. Stone was appointed referee. He was then and is now justice of the supreme court of the state of Minnesota and, the D. & H. states: "duly qualified as a referee under all applicable provisions of the Railway Labor Act." He heard the cases and was engaged in completing his decisions on them and had stated that 73 cases were complete, when the labor organizations suddenly withdrew the complaints, allegedly as a result of the premature discovery of the nature of the forthcoming decisions.

Justice Stone complained as to the propriety of this procedure in open letters to the adjustment board and to the National Mediation Board. However, nothing further was done and the cases remained in abeyance until March, 1941, when, the D. & H. maintains in its complaint, five of the cases were re-submitted to Division 1 under a new guise, but still the same cases that were previously heard. Another group of five cases was filed a month later. The D. & H. claims that the strategy of labor will be to re-submit these cases from time to time in batches of five or ten, until all the cases have been re-submitted and, presumably, given a new hearing and award by a different referee.

March Bus Revenues 13.9 Per Cent Above 1940

Class I motor carriers of passengers reported March revenues of \$10,015,998 as compared with \$8,791,568 in March, 1940, according to the latest compilation prepared by the Interstate Commerce Commission's Bureau of Statistics from 147 re-

summer rate on ex-lake grain from Buffalo and Erie to Baltimore, for export, is not below a reasonable minimum rate; that free storage of 10 days at New York on export grain as compared with 20 days free time at Philadelphia, Baltimore and Norfolk, Va., is not unduly prejudicial to New York; and that rates on ex-lake grain from Toledo, Ohio, to New York, for export, are unduly prejudicial to New York and unduly preferential of Philadelphia and Baltimore to the extent that the rates to New York exceed the rates to the latter ports by more than 1.5 cents per 100 lb.

The proceeding is docketed as No. 28466, Port of New York Authority v. Baltimore & Ohio Railroad Company, et. al.

Government Urges Summer Buying of Coal

The federal government has urged domestic consumers of anthracite and bituminous coal to do their bit for national defense and at the same time save money by purchasing and storing their winter coal at the lower prices which prevail during the summer.

The appeal to the public was made by Paul F. Sifton, deputy bituminous coal consumers' counsel, who said that the program carried the endorsement of William S. Knudsen, director general of the Office of Production Management; Ralph Budd, transportation member of the National Defense Advisory Commission; Leon Henderson, administrator of the Office of Price Administration and Civilian Supply; and Miss Harriet Elliott, consumers' adviser of the Office of Price Administration and Civilian Supply.

Officials said that they hoped to increase the summer movement of domestic coal

preferred stockholders of the Chicago & North Western after the Interstate Commerce Commission had refused to do so, thus opening the way for the railroad to continue its fight against a plan of reorganization which was approved recently by Judge Barnes.

The appellate court ruled that the matter should be remanded to Judge Barnes for a rehearing, stating that "The district court intimated, if it did not say, it would make the order (for the maximum allowance) if it had authority to do so. We think the court has the authority. Of the necessity and reasonableness of future . . . expenses, the trial court rather than the I. C. C., is the best judge."

Application and Verification of Interline Freight Divisions

The Accounting Division of the Association of American Railroads has issued a 76-page pamphlet, entitled "Plans and Methods Used in the Application and Verification of Interline Freight Divisions." Published in response to a recommendation of the Division's committee on freight accounts, the pamphlet describes 10 plans in use by various railroads.

A foreword by E. H. Bunnell, vice-president of the A. A. R. in charge of the Finance, Accounting, Taxation and Valuation Department, suggests that there are undoubtedly other "economical and practical" plans in use; and Mr. Bunnell invites carriers having such plans to submit descriptions of them for consideration by the committee on freight accounts. That committee's recommendation that the present pamphlet be issued came in a report on the subject of "Preaudit of Divisions on Interline Carload Traffic," which was submitted at a meeting held in Cleveland, Ohio, April 22-24.

Equipment Depreciation Orders

Equipment depreciation rates for six railroads, including the Northern Pacific, have been prescribed by the Interstate Commerce Commission in a new series of sub-orders and modifications of previous sub-orders in No. 15100, Depreciation Charges of Steam Railroad Companies.

Prescribed rates for the Northern Pacific are: Steam locomotives, 3.07 per cent; other locomotives, 3.94 per cent; freight-train cars (new), 3.2 per cent; freight-train cars (secondhand and rebuilt), 4.48 per cent; passenger-train cars, 3.07 per cent; work equipment, 3.53 per cent; miscellaneous equipment, 15.07 per cent. The other five roads involved in the present series of orders are the Aliquippa & Southern; Bingham & Garfield; Detroit, Toledo & Ironton; New York, Ontario & Western; and Tucson, Cornelia & Gila Bend.

Old Employees Guests of Lima Locomotive Works

Two hundred ninety employees of the Lima Locomotive Works, Inc., with service records of 25 or more years, guests of the company at dinner at Lima, Ohio, on June 10, were told by H. O. Bentley, the company attorney, in a brief address, that they were participating in a level of material prosperity that their children and

	Passenger revenue		Passengers carried	
	March 1941	March 1940	March 1941	March 1940
New England Region	\$427,384	\$391,656	1,118,341	968,786
Middle Atlantic Region	1,205,828	1,241,049	2,713,968	2,510,689
Central Region	1,698,034	1,564,362	2,894,411	2,501,323
Southern Region	2,731,859	2,212,787	3,579,789	2,752,057
Northwestern Region	338,512	343,453	313,143	313,670
Mid Western Region	772,504	692,246	632,482	584,128
Southwestern Region	1,371,673	1,098,281	1,576,406	1,186,589
Rocky Mountain Region	88,640	84,396	72,203	78,268
Pacific Region	1,381,564	1,163,338	1,991,177	1,426,983

ports representing 148 bus operators. Railroads in March had passenger revenues of approximately 20 per cent greater than those of March, 1940. Bus passengers carried increased 20.9 per cent, from 12,322,493 to 14,891,920.

The breakdown by regions of the bus revenue and traffic figures, which exclude data on charter or special party service, is given in the accompanying table.

Atlantic Port Differentials on Ex-Lake Grain for Export

Examiner H. W. Archer has recommended in a proposed report an Interstate Commerce Commission finding that the differential of one-half cent per 100 lb. in the rates on ex-lake grain from Buffalo, N. Y., and Erie, Pa., to New York, for export, over the rates to Philadelphia, Pa., and Baltimore, Md., are not unduly prejudicial to New York.

Other recommended findings are that the

by at least 8,000,000 tons in order to lighten "the peak that movement of crops and national defense production will throw upon the transport system beginning next September."

"This year," said Mr. Sifton, "when all indications point to a peak transport load that will tax the railroad facilities, it is vitally important both for the protection of the nation's winter fuel supply at points of consumption and for smooth movement of production, that every consumer do his bit to move as much coal as possible before Labor Day."

Way Opened for C. & N. W. Stockholders to Appeal

On June 6 the United States Circuit Court of Appeals at Chicago reversed Federal Judge John P. Barnes' decision in which he held that he did not have the authority to set a maximum allowance for perfecting an appeal of the common and

children's children would never know. He urged them to "keep a tight hold on their chairs" and to avoid the hysteria which in some localities is creating a state of anarchy in industries essential to national defense. During the dinner, at which Samuel G. Allen, chairman of the board, presided, gold-and-enamel pins were presented to the 25-year-and-up employees who represent nearly 12 per cent of the total payroll.

Felicitations were extended by John E. Dixon, president, and L. A. Larsen, vice-president, of the company, and H. F. Ball, president of the Franklin Railway Supply Company, who has been a director of Lima for 25 years.

Suggestions for Changes in Class Rate Structure

Proposals for radical changes in the class rate structure throughout the country are embodied in the treatise entitled "Some Suggestions for Improvements in Railroad Class Rates" which has been prepared by C. G. Jensen, assistant to the director of the Interstate Commerce Commission's Bureau of Traffic. As noted briefly in the *Railway Age* of June 7, the Jensen treatise is one of four studies by I. C. C. staff members which have been made the subject of initial hearings to be held July 10 at St. Louis, Mo., in the commission's No. 28300 and 28310 investigations of the class rate structure and consolidated freight classification.

Generally, Mr. Jensen suggests that first-class rates throughout the country be constructed by the addition of line-haul elements to a terminal element, the latter being uniformly fixed at 25 cents per 100 lb. in all territories. In other words it is suggested that territorial variations in level should exist in the line-haul elements only. Mr. Jensen believes that the lowest level should obtain in Central territory, but he would move the boundary between Central and Trunk Line territories westward to coincide approximately with a line drawn from Cleveland, Ohio, to Huntington, W. Va. The line-haul factor of rates in Trunk Line and New England territories would be five per cent higher than in Central territory.

With respect to Southern territory, Mr. Jensen suggests a division of that area, north and south of a line drawn from Halls, Tenn., through Nashville, Bristol, Tenn.-Va., Winston-Salem, N. C., and Raleigh to Washington, N. C., with rates in the northern section 10 per cent higher and in the southern section 20 per cent higher than in Central territory. The four class-rate zones in Western Trunk Line territory and in the Southwest, according to Mr. Jensen, should be retained—with the class rates made 10, 20, 30, and 40 per cent higher, respectively, than in Central territory. Likewise, he recommends that the first-class rates in Mountain-Pacific territory also be made 40 per cent higher than in Central territory, except in Washington and Oregon, where the suggested basis is 20 per cent higher than Central territory, and in a coastal section of California where he would make the differential only 10 per cent.

The proposed basis of rates for Central

territory, for first class only, is the terminal factor of 25 cents, plus a line-haul factor of 17.8 cents per 100 miles for distances up to 500 miles, and 13.5 cents per 100 miles beyond 500.

With respect to the classification, Mr. Jensen suggests that the railroads, given the first-class rates he proposes as a base, revise their classifications upward so as to preserve substantially their present revenues from class traffic. In his opinion the present class rates in the south and west exceed those in the east by greater percentages than the percentages of differences in the actual rate levels, and that this has necessitated the maintenance of lower classifications in the south and west than in the east. These differences in classifications, Mr. Jensen further believes, make the establishment of reasonable interterritorial class rates practically impossible. His thought is that if the levels of the first class

rates are brought closer together and the classifications revised as suggested, the result will be a closer approach to uniformity of classification than has heretofore been possible; and the interterritorial class rate problem will be greatly simplified.

Mr. Jensen's treatise is a 131-page document, plus an appendix which sets up a comparison of present scales with those suggested.

March's Net Income Was \$35,256,352

Class I railroads reported for March a net income after fixed charges of \$35,256,352 as compared with a net deficit of \$4,682,087 in March, 1940, according to the Interstate Commerce Commission's monthly compilation of selected income and balance sheet items. The year's first three months showed a net income of \$69,034,952 as com-

Selected Income and Balance-Sheet Items of Class I Steam Railways in the United States

Compiled from 132 Reports (Form IBS) Representing 137 Steam Railways
(Switching and Terminal Companies Not Included)

Income Items	All Class I Railways			
	For the month of March		For the three months of	
	1941	1940	1941	1940
1. Net railway operating income	\$80,627,168	\$37,034,274	\$201,503,219	\$115,903,571
2. Other income	10,486,137	11,885,382	32,425,819	33,820,165
3. Total income	91,113,305	48,919,656	233,929,038	149,723,736
4. Miscellaneous deductions from income..	3,001,923	2,577,004	8,590,972	8,146,790
5. Income available for fixed charges..	88,111,382	46,342,652	225,338,066	141,576,946
6. Fixed charges:				
6-01. Rent for leased roads and equip-				
ment	13,126,027	10,568,010	37,415,769	32,129,540
6-02. Interest deductions ¹	37,604,576	38,368,164	112,552,039	115,054,212
6-03. Other deductions	117,687	122,783	356,070	385,687
6-04. Total fixed charges	50,848,290	49,058,957	150,323,878	147,569,439
7. Income after fixed charges	37,263,092	*2,716,305	75,014,188	*5,992,493
8. Contingent charges	2,006,740	1,965,782	5,979,236	5,897,338
9. Net income	35,256,352	*4,682,087	69,034,952	*11,889,831
10. Depreciation (Way and structures and				
Equipment)	17,861,188	17,025,214	53,156,338	50,724,495
11. Federal income taxes	11,261,138	2,815,702	24,515,504	8,759,639
12. Dividend appropriations:				
12-01. On common stock	1,727,155	3,278,918	17,234,965	20,163,873
12-02. On preferred stock	1,324,448	75,000	4,444,295	4,500,635
Ratio of income to fixed charges (Item				
5 ÷ 6-04)	1.73	.94	1.50	.96
Selected Asset and Liability Items	All Class I Railways			
	Balance at end of March			
	1941	1940		
13. Investments in stocks, bonds, etc., other than those of affiliated				
companies (Total, Account 707)	\$560,430,308	\$615,633,198		
14. Cash	\$676,219,124	\$496,503,407		
15. Temporary cash investments	69,937,442	43,332,794		
16. Special deposits	130,178,007	127,124,532		
17. Loans and bills receivable	1,610,450	1,537,592		
18. Traffic and car-service balances—Dr.	33,275,676	24,397,414		
19. Net balance receivable from agents and conductors	62,198,086	43,710,657		
20. Miscellaneous accounts receivable	136,831,892	119,708,698		
21. Materials and supplies	371,419,378	366,362,534		
22. Interest and dividends receivable	17,142,196	19,720,682		
23. Rents receivable	1,148,572	1,268,675		
24. Other current assets	6,271,181	4,690,999		
25. Total current assets (items 14 to 24)	\$1,506,232,004	\$1,248,357,984		
26. Funded debt maturing within 6 months ²	\$96,317,217	\$189,942,091		
27. Loans and bills payable ³	\$77,982,482	\$156,192,621		
28. Traffic and car-service balances—Cr.	49,695,908	39,224,028		
29. Audited accounts and wages payable	237,312,405	225,545,779		
30. Miscellaneous accounts payable	52,587,914	64,514,971		
31. Interest matured unpaid	56,628,539	40,276,116		
32. Dividends matured unpaid	14,330,714	12,273,447		
33. Unmatured interest accrued	78,378,923	80,120,547		
34. Unmatured dividends declared	1,608,245	1,608,245		
35. Unmatured rents accrued	21,513,606	22,382,022		
36. Accrued tax liability	228,778,432	197,881,630		
37. Other current liabilities	39,530,315	50,171,701		
38. Total current liabilities (items 27 to 37)	\$858,347,483	\$890,191,107		
39. Analysis of accrued tax liability:				
39-01. U. S. Government taxes	120,619,363	82,602,980		
39-02. Other than U. S. Government taxes	108,159,069	115,278,650		

* Deficit or other reverse items.

¹ Represents accruals, including the amount in default.

² Includes payments of principal of long-term debt (other than long-term debt in default) which will become due within six months after close of month of report.

³ Includes obligations which mature not more than 2 years after date of issue.

Net Income of Large Steam Railways

(Switching and Terminal Companies Not Included)

Name of railway	Net income after depreciation		Net income before depreciation	
	For the three months of		For the three months of	
	1941	1940	1941	1940
Alton	\$150,549	\$524,757	\$81,977	\$460,288
Atchison, Topeka & Santa Fe ¹	2,309,448	1,555,284	5,342,259	1,388,963
Atlantic Coast Line	3,353,547	765,213	3,941,314	1,274,544
Baltimore & Ohio	3,446,979	2,101,698	5,319,077	310,586
Boston & Maine	1,169,184	218,420	1,524,507	143,921
Central of Georgia ²	55,917	786,559	158,481	574,566
Central of New Jersey ²	621,070	736,854	290,814	386,189
Chesapeake & Ohio	8,468,568	7,441,678	10,609,860	9,549,678
Chicago & Eastern Illinois	520,474	350,436	674,954	199,302
Chicago & North Western ²	1,685,218	4,633,979	475,906	3,395,853
Chicago, Burlington & Quincy	2,809,665	246,702	4,187,209	1,544,978
Chicago Great Western	193,609	353,831	334,674	214,024
Chicago, Milwaukee, St. Paul & Pacific ²	385,149	2,844,693	1,900,311	1,374,119
Chicago, Rock Island & Pacific ²	39,664	2,792,559	1,130,703	1,768,528
Chicago, St. Paul, Minneapolis & Omaha	561,506	821,263	425,496	679,220
Delaware & Hudson	690,154	219,940	976,749	483,040
Delaware, Lackawanna & Western	744,494	407,014	1,363,138	193,289
Denver & Rio Grande Western ²	1,112,460	1,494,914	788,179	1,183,509
Elgin, Joliet & Eastern	1,664,892	650,996	1,971,828	884,988
Erie (including Chicago & Erie) ³	1,401,904	921,818	2,320,005	18,668
Grand Trunk Western	525,768	110,990	818,884	186,830
Great Northern	2,587,034	2,880,153	1,517,816	1,963,377
Illinois Central	3,193,233	203,275	4,879,591	1,791,268
Lehigh Valley	723,325	446,872	1,224,956	77,770
Long Island	467,547	720,967	77,271	429,033
Louisville & Nashville	3,836,538	1,235,927	4,950,014	2,314,879
Minneapolis, St. Paul & Sault Ste. Marie ²	1,864,577	1,693,581	1,544,997	1,386,869
Missouri-Kansas-Texas	477,322	974,198	188,674	672,451
Missouri Pacific ²	600,817	3,282,932	526,162	2,161,325
New York Central ⁵	6,383,656	527,616	10,918,920	3,437,998
New York, Chicago & St. Louis	2,034,254	451,619	2,447,392	848,405
New York, New Haven & Hartford ²	454,359	1,350,864	1,286,506	526,998
Norfolk & Western	8,449,540	7,840,412	10,106,355	9,378,814
Northern Pacific	948,644	1,887,659	96,256	1,051,309
Pennsylvania	7,539,938	4,702,948	14,513,809	11,283,950
Pere Marquette	995,511	425,658	1,564,680	1,000,870
Pittsburgh & Lake Erie	1,237,513	707,634	1,834,265	1,254,618
Reading	2,252,523	1,056,196	3,011,215	1,834,728
St. Louis-San Francisco ²	618,413	2,888,233	134,333	2,127,529
St. Louis, San Francisco & Texas	24,698	134,059	24,698	133,920
St. Louis Southwestern ²	898,962	59,699	1,061,490	217,777
Seaboard Air Line ¹	705,733	613,840	1,314,379	39,987
Southern	3,390,096	276,696	4,293,429	1,158,877
Southern Pacific ⁶	4,450,418	3,673,591	6,458,649	1,681,899
Texas & Pacific	661,974	293,079	978,496	595,783
Union Pacific (including leased lines)	1,825,325	1,418,744	3,837,869	3,316,052
Wabash ¹	475,491	984,743	1,018,132	446,288
Yazoo & Mississippi Valley	119,375	85,205	13,137	31,318

* Deficit.

¹ Report of receiver or receivers.² Report of trustee or trustees.³ Under trusteeship, Erie only.⁴ Includes Atchison, Topeka & Santa Fe, Gulf, Colorado & Santa Fe, and Panhandle & Santa Fe.⁵ Includes Boston & Albany, lessor to New York Central.⁶ Includes Southern Pacific, Texas & New Orleans, and leased lines. The report contains the following information: "Figures reported above for Southern Pacific Transportation System exclude offsetting debits and credits for interest on funded securities and rentals for leased properties between companies included therein. Operations for 1941 of separately operated Solely Controlled Affiliated Companies (excluding results for Southern Pacific Railroad Company of Mexico), not included in above statement, resulted in a net loss of \$283,689 for the month and \$1,038,762 for the period. These results include \$219,132 for the month and \$652,545 for the period, representing interest on bonds of such companies owned by Southern Pacific Company not taken into income by S. P. Co. and, therefore, not included in the 1941 income results for the System reported above. The combined results for 1941 for Southern Pacific Transportation System and separately operated Solely Controlled Affiliated Companies (excluding S. P. R. R. Co. of Mexico) amounted to a net income of \$2,122,397 for the month and \$4,064,201 for the period. Figures herein given exclude results of Southern Pacific Railroad Company of Mexico for the reason that policy was adopted January 1, 1940 of making no further advances to that company, it being required to conduct its operations entirely within its own resources."

pared with a net deficit of \$11,889,831 for the first three months of 1940.

The roads not in receivership or trusteeship had a net income for March of \$33,821,398 as compared with \$4,355,166 for the same month of last year; while the net income for the first three months of this year was \$73,092,506 as contrasted with \$15,375,813 for the same period last year.

Ninety-one roads reported net incomes for March, while 38 reported net deficits; in March, 1940, there were 61 net incomes and 68 net deficits. For the first three months of this year 84 reported net incomes and 45 reported net deficits, as compared, respectively, with 63 net incomes and 66 net deficits in the first three months of 1940.

The consolidated statement for all Class I roads and that showing net incomes or deficits of "large steam railways" are given in the accompanying tables.

43 Eastern Roads Sign Up on Featherbed Changes

Forty-three Eastern railroads and terminal companies—including all major roads except the Pennsylvania—have served individual notice in their own behalf on the five train-and-engine-service brotherhoods of intention to modify certain important "featherbed" rules in existing agreements and add a new rule limiting the time within which grievances and claims may be presented. Such notice was served as of May 27 at which time the Eastern Railroad Presidents Conference announced that "practically all of the Eastern railroads" would join a move to modify rules covering: (1) starting time of yard crews; (2) use of road crews to perform incidental switching at terminals; and (3) handling of freight in passenger trains; which was

reported in the *Railway Age* of May 31, page 987. However, the complete list of roads which filed individual notice has only recently been available.

Roads and terminal companies which have served notice on their own behalf are:

Ann Arbor
Baltimore & Ohio
Bessemer & Lake Erie
Boston & Maine
Canadian National—lines in New England
Central of New Jersey
Central Vermont
Chicago, Indianapolis & Louisville
Delaware & Hudson
Delaware, Lackawanna & Western
Detroit, Toledo & Ironton
Detroit Terminal
Erie
Chicago & Erie
New Jersey & New York
Grand Trunk Western
Indianapolis Union
Lehigh & New England
Lehigh Valley
Maine Central
Portland Terminal
Monongahela
New York Central
Boston & Albany
Chicago River & Indiana—Chicago Junction
Cleveland, Cincinnati, Chicago & St. Louis
Louisville & Jeffersonville Bridge & Railroad
Peoria & Eastern
Indiana Harbor Belt
Michigan Central
Pittsburgh & Lake Erie
Lake Erie & Eastern
New York, Chicago & St. Louis
New York, New Haven & Hartford
New York, Susquehanna & Western
Pere Marquette
Fort Street Union Depot
Pittsburgh & West Virginia
Pittsburgh, Chartiers & Youghiogeny
Reading
Staten Island Rapid Transit
Washington Terminal
Wheeling & Lake Erie

These roads have served notice of their intention on the Brotherhood of Locomotive Engineers, Brotherhood of Locomotive Firemen & Enginemen, Order of Railway Conductors, Brotherhood of Railroad Trainmen, and the Switchmen's Union of North America.

President Asks \$100,000 for Transport Study Board

Although he had done nothing in the way of sending to the Senate the name of another nominee to replace Wayne Coy, whose appointment was withdrawn on April 29, President Roosevelt on June 4 transmitted to Congress a request for a \$100,000 appropriation "to be immediately available" for the transportation study board called for in the Transportation Act of 1940. Meanwhile the Senate committee on interstate commerce has indicated no disposition to act on the names of the other two nominees—Charles West and Nelson Lee Smith.

Along with his request for the funds, the President sent a letter on the matter which had been prepared by Harold D. Smith, director of the Bureau of the Budget. Mr. Smith said in part:

"On March 19, 1941, the President transmitted to the Speaker of the House of Representatives an estimate of \$50,000 for the Board of Investigation and Research for the fiscal year 1941. Because of anticipated delays in the organization of the Board, the Congress decided not to take any action on this estimate. It now appears that the Board will soon be established and that funds should be provided for its operation. The amount requested herein is somewhat larger than the original estimate submitted for the fiscal year 1941, which estimate was only for part-year operations. Until such

time as the Board meets and reviews its problems, the exact staff which it shall need to undertake the duties imposed upon it by the act of 1940 cannot be determined. It is believed, however, that to the extent possible the Board will utilize material obtained from the Department of Commerce, the Interstate Commerce Commission, the United States Maritime Commission, and other agencies of the government interested in transportation matters. Therefore, the \$100,000 which is requested at this time should be sufficient to enable the Board to start the task which it has been directed to undertake by the Congress. At a later date it may become necessary to request additional funds for the Board."

AB&C Boosts Pay To Avert Strike

(Continued from page 1085)

Labor Act itself. The board places responsibility for proper use of the Act upon both labor and management. "In the formulation of the present machinery, both labor and management played an important role. It is in a sense their machinery and it represents their accumulated and joint wisdom in a search for industrial peace. For either management or labor to turn its back upon a particular step in the machinery provided for the settlement of disputes because it feels that in a particular controversy it stands to lose, is to jeopardize the entire machinery, the beneficial character of which to labor, to management and to the public has been generally recognized."

The board's report recalls that there has been considerable unrest among A. B. & C. employees since 1921, when, under court direction, the receiver of the then Atlanta, Birmingham & Atlantic reduced the wages of all employees by one-half the increase granted during the period of federal control to bring wages up to Class I standards. When 1500 employees went out on strike in protest, the road hired practically all new employees and resumed operation. The new personnel organized a company union. Unrest was renewed by the appearance of rival local unions claiming jurisdiction over the same group of employees, culminating in elections in 1938 to determine representation for conductors, trainmen, yardmen and switchmen, and in 1940 for engineers, firemen and hostlers. For the first group the National Mediation Board certified the Brotherhood of Railroad Trainmen and for the second, the Brotherhood of Locomotive Firemen and Enginemen.

Soon after their respective dates of certification, these labor organizations submitted to the road proposed new agreements providing so-called "standard" wages and working conditions. Although preliminary negotiations on the property resulted in agreement on many points, certain fundamental matters—principally wage rates—remained unsettled. Services of the Mediation Board were invoked but did not reconcile the differences. The carrier rejected the Board's formal request for submission to a board of arbitration on the ground that since its financial position would make impossible any compliance with an award

involving a wage increase, it was not justified in incurring an obligation which it could not fulfill. The two brotherhoods called a strike for May 16, which was averted by eleventh-hour appointment of the emergency board.

Throughout negotiations, the railroad took the position that it was unable to bear any wage increase and that any substantial wage boost would mean abandonment of operations. During its entire corporate history it has operated at a substantial loss. In no year since 1927 has it had adequate funds from net revenue to meet even taxes and balance on equipment rentals. In fact, tax obligations have often been met by selling tax liens to local banks, at a four per cent interest rate. Wage demands of the brotherhoods for standard wages for 375 employees would increase the payroll \$780,000 per annum. Further, the carrier contended, having granted this increase, it would be obligated to increase the wages of 781 non-operating employees not parties to the controversy—an additional increase of \$373,200.

The brotherhoods clung to their traditional position that "ability to pay" is not a criterion. The character of service rendered by employees of the A. B. & C. is, they claimed, the same as that rendered on roads on which standard wages prevail. In illustration, they cited the "Dixie Flagler," operating between Chicago and Florida, which is handled by five train crews, all of whom receive standard rates of pay, except crews operating over the A. B. & C. They asserted also that all Class I roads in the Southeast pay standard wages, except one.

In announcing settlement of the dispute by compromise, the emergency board declared: "While the carrier's financial position is still uncertain, there is reason to believe that as long as the present accelerated state of business activity is maintained, the carrier will be able to continue to pay the wages agreed upon. There is likewise the alternative, should circumstances demand it and the parent company choose to exercise it, that the parent company [Atlantic Coast Line] lend financial assistance to the subsidiary, or that it effect a redistribution of revenue in favor of the subsidiary on traffic handled jointly."

Says Railroads Must Not Yield to Labor Demands

In an address before the Trans-Missouri-Kansas Shippers Board at the Allis Hotel, Wichita, Kan., on June 4, C. E. Johnston, chairman of the Western Association of Railway Executives, attacked the wage increase demands of railroad unions. He said in part:

"In the railroad industry we are confronted with one of the most preposterous demands in our economic history. Five of the best paid crafts, who today enjoy the highest rate of pay since the railroads were constructed, are reported to be preparing a demand for a 30 per cent increase in wages. This demand is being made with appalling disregard of the national interest. It is being made against the railroad industry, which is the backbone, the very life of our stupendous industrial effort for national defense.

"Almost one-third of the railroad mileage

is still in bankruptcy or reorganization. We are struggling under the burden of deficits accumulated through the depression period. We are straining every effort to find capital to modernize and further expand our plant facilities—facilities which have miraculously managed to struggle through a starvation period. This starvation—mind you—was aggravated by the unprecedented development of highway, waterway, and airway transportation, much of which was fed on subsidy provided by government through the influence of selfish pressure groups."

"Too many of our citizens have too long considered labor controversies of this character in the railroad and other industries as mere differences between men and management. We have closed our eyes to the obvious fact that the shipper or customer must finally pay the bill. The basic theory of federal legislation pertaining to labor relations in the railroad field is that the influence of public opinion will ultimately force a fair decision. The railroads simply cannot yield to these unreasonable demands. If we are to avoid strikes and paralysis in rail transportation and the ultimate socialization of transportation, you and the rest of the public must assume your responsibility in this conflict. You must formulate your opinions now, and express them in no uncertain terms and you must make plans to participate actively in the determination of this question which is vital to you."

Freight Car Loading

Carloading figures for the week ended June 7 were not available at the time this issue went to press.

As reported in last week's issue, the loadings for the previous week ended May 31 totaled 801,783 cars. The summary for that week, as compiled by the Car Service Division, A. A. R., follows:

Revenue Freight Car Loading

For Week Ended Saturday, May 31

Districts	1941	1940	1939
Eastern	164,948	129,395	114,580
Allegheny	179,949	134,454	107,737
Pocahontas	56,273	47,895	40,471
Southern	116,593	95,285	85,360
Northwestern ..	126,503	103,370	88,554
Central Western	107,598	87,773	86,599
Southwestern ..	49,919	40,948	40,008
Total Western Districts	284,020	232,091	215,161
Total All Roads	801,783	639,120	563,309
Commodities			
Grain and grain products	36,143	27,243	30,299
Live stock	8,973	10,533	9,770
Coal	144,507	113,221	88,184
Coke	13,718	8,821	5,256
Forest products	39,196	32,263	27,350
Ore	76,145	59,663	38,987
Merchandise l.c.l.	143,327	130,439	133,320
Miscellaneous ..	339,774	256,937	230,143
May 31	801,783	639,120	563,309
May 24	866,017	687,480	623,542
May 17	861,277	679,065	612,888
May 10	837,149	680,628	554,644
May 3	794,301	665,547	572,025

Cumulative Total,
22 Weeks ... 16,336,291 14,017,582 12,699,847

In Canada.—Carloadings for the week ended May 31 were the heaviest this year and totaled 64,297, as against 56,459 for the corresponding week last year, and 57,242 in the preceding week, according to the

Continued on next left-hand page

May 10, 1941



Superior
NEW
POWER

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FAST
and
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IMPROVED FAST FREIGHT SCHEDULES

Between
**CHICAGO
MILWAUKEE
MANITOWOC**
and
**ST. PAUL
MINNEAPOLIS
DULUTH
ASHLAND
WINNIPEG,
MANITOBA**
and
**PORTAL,
NORTH DAKOTA**



SOO SERVICE IS ALWAYS SATISFACTORY

These high-speed, heavy-duty 4-8-4 type freight locomotives were built by the Lima Locomotive Works, Incorporated for the Soo Line.

LIMA LOCOMOTIVE WORKS



INCORPORATED, LIMA, OHIO

weekly statement of the Dominion Bureau of Statistics.

	Total Cars Loaded	Total Cars Rec'd from Connections
Total for Canada:		
May 31, 1941.....	64,297	32,324
May 24, 1941.....	57,242	29,232
May 17, 1941.....	61,737	30,232
June 1, 1940.....	56,459	22,869
Cumulative Totals for Canada:		
May 31, 1941.....	1,237,172	640,206
June 1, 1940.....	1,069,761	538,818
June 3, 1939.....	938,418	463,727

I. C. C. Probe of Keeshin Activities at Chicago

Freight-handling arrangements which Keeshin Truck-Rail Terminals, Inc., of Chicago is alleged to have with other Keeshin companies and a group of motor carriers operating out of Chicago have been made the subject of an investigation instituted by the Interstate Commerce Commission upon its own motion. The order of investigation states that information has been lodged with the commission averring, among other things, that the practices involved result in the transportation of shipments by the cooperating motor carriers "at less than their lawfully effective tariff rates; in the granting of substantial rate concessions by the respective line-haul carriers to, and the acceptance thereof by Keeshin Truck-Rail Terminals, Inc., Keeshin Motor Express Company, Inc., and Keeshin Freight Lines, Inc.; in the holding by the said Keeshin corporations of a monopolistic control over less-than-truckload traffic originating in and passing through Chicago, and the movement by said Keeshin Motor Express, Inc., and the said cooperating carriers of a disproportionate share of such traffic, to the serious competitive disadvantage of other carriers operating from that area; and in the flagrant and continuous violation of the Interstate Commerce Act and of the regulations promulgated thereunder by the commission."

Describing the arrangements to be investigated, the order has this to say: "That Keeshin Truck-Rail Terminals, Inc., and its officers above named, by and with the active assistance and cooperation of Keeshin Motor Express Company, Inc., and its officers above named, have entered into certain arrangements with each of the motor carriers named in paragraph 2 above for the handling of less-truckload traffic originating in Chicago and destined to points beyond Chicago which are not served by the lines of said Keeshin Motor Express Company, Inc., but which are served by the lines of such other common carriers; that through such arrangements the said Keeshin Truck-Rail Terminals, Inc., furnishes to shippers in Chicago a complete transportation service from their premises to ultimate destination, including, under an arrangement with Keeshin Motor Express Company, Inc., the free pick-up of their shipments at their premises and the delivery of them to its terminal, where all such shipments are sorted and such as can be transported to destination by Keeshin Motor Express Company, Inc., are routed over lines of that company, and where all other shipments, which can be transported to destination by motor vehicle, are delivered to such of the cooperating line-haul carriers, named in paragraph 2 above, as operate to the points of destination; that all

such carriers pick up such shipments at the docks of said Keeshin Truck-Rail Terminals, Inc., and upon completion of the transportation render freight bills at their lawfully filed and published less-truckload rates to said Keeshin Truck-Rail Terminals, Inc., which pays such charges, less a deduction of ten cents per hundred pounds or a minimum of 25 cents per shipment; that said Keeshin Truck-Rail Terminals, Inc., renders to the original shipper in Chicago for each shipment so handled a freight bill in the amount of the cooperating line-haul carrier's lawful less-truckload charges and is paid by the original shipper such amount but no extra amount for the pick-up and local cartage and other described special services in handling; that less-truckload shipments transported into Chicago by Keeshin Motor Express Company, Inc., for further movement beyond Chicago to destinations not served by that company are delivered at the docks of Keeshin Truck-Rail Terminals, Inc., and by it likewise sorted and routed over the lines of the said cooperating carriers, who render to it bills for transportation charges at their lawful less-truckload rates and receive payment thereof, less a deduction by said Keeshin Truck-Rail Terminals, Inc., of ten cents per hundred pounds or a minimum of 25 cents per shipment; and that Keeshin Truck-Rail Terminals, Inc., has not filed with this Commission a tariff of its rates and charges for the said transportation services which it furnishes and sells, and each of said cooperating line-haul carriers has no specific tariff authority for such handling of shipments or for allowing such deductions from its published charges to be made."

Report is Released on Truck Drivers' Fatigue

A report on "Fatigue and Hours of Service of Interstate Truck Drivers," prepared by the U. S. Public Health Service at the request of the Interstate Commerce Commission, was made public on June 11 by the commission. In a foreword, Joseph B. Eastman, chairman of the commission, states that the report is to be viewed as "a pioneering effort in many respects and substantially the first in which commercial drivers have been tested in their day-to-day environment."

The report describes the results of tests conducted prior to the effective date of the commission's hours-of-service regulations at Baltimore, Nashville, and Chicago upon a total of 889 drivers engaged mainly in over-the-road truck operations. These tests were given in order to study relationships between hours of driving and other conditions of work, and fatigue and physical fitness of the drivers, as measured by psychological, physiological, and medical tests. Each driver's occupational and medical history and indications of his hours, conditions of work and habits were obtained. Time did not permit the testing of drivers of buses.

Results of the tests, as summarized in part in the report, are as follows:

"The medical examinations shows that the drivers as a group were in good health. However, the incidence of poor eyesight, bloodshot eyes, high white cell counts, and

tremor of the hands was higher than is usually found in healthy men of like age groups.

"The men who had not driven at all had the highest average efficiency, those who had driven less than 10 hours had the next highest average efficiency, and those who had driven over 10 hours had the lowest average efficiency on tests of the following seven functions: Speed of tapping, reaction-coordination time, simple reaction time, manual steadiness, body sway, driving vigilance, and the ability to distinguish flicker. These tests showed the most consistent and definite results from the standpoint of distinguishing between groups of men on the basis of their recent driving experience. The first four are all relatively simple performance tests which can be administered in a few minutes with easily portable equipment.

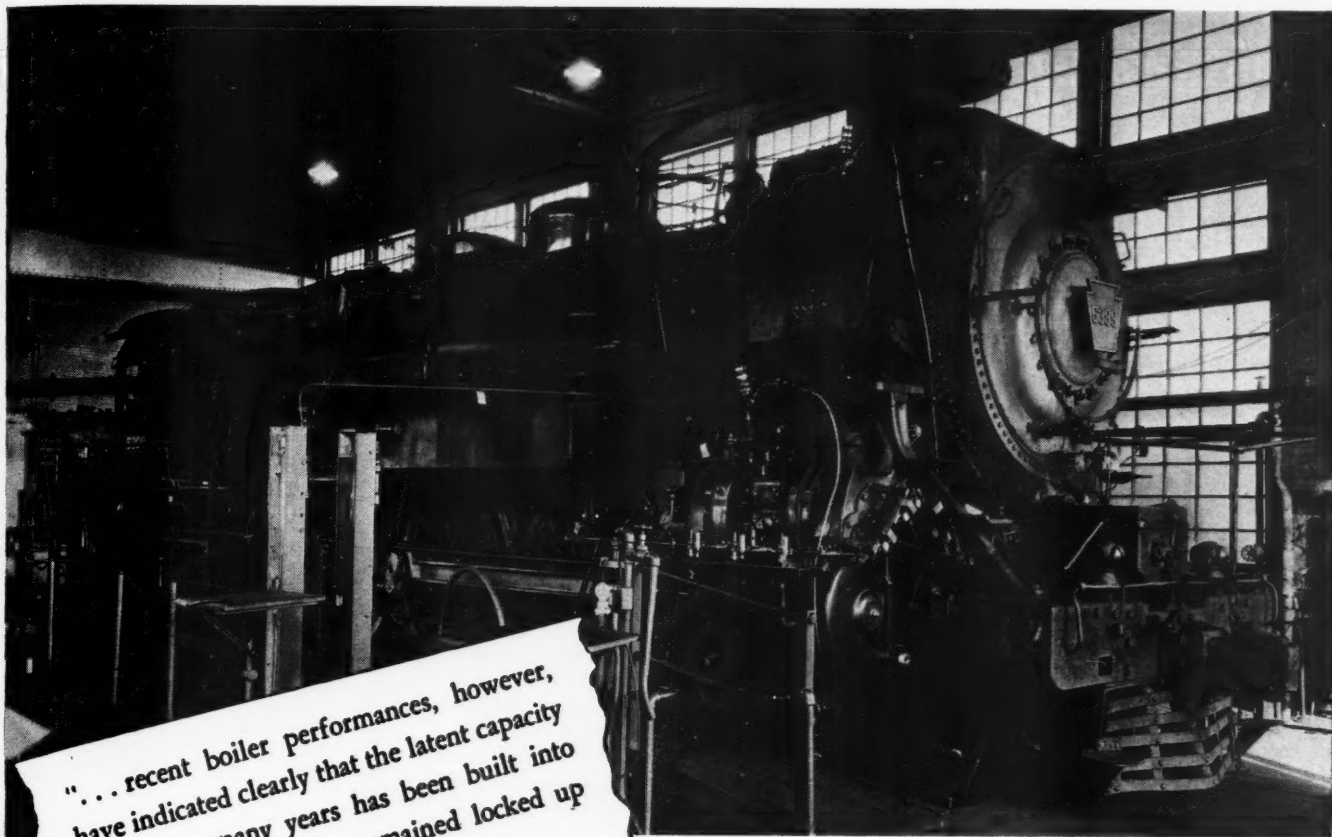
"Men who had driven at all performed less efficiently, on the average, than those who had not driven, on tests of the following three functions: Aiming, resistance to glare, and speed of eye movement. The data from the three cities are inconsistent on the question as to whether the 10 hours and over group of drivers performed less efficiently than the one up to 10 hours group on these tests.

This study was instituted by the commission in connection with its regulations on the subject of maximum hours of service of drivers of trucks and buses engaged in operations in interstate or foreign commerce. These regulations require that a driver must be off duty for a period of eight hours after having driven for 10 hours. The results of these tests do not indicate any single point at which continued driving becomes definitely unsafe for the average driver. After a sharp initial drop, the decline in general efficiency seems to be "gradual and continuous rather than setting in abruptly after a particular number of hours of driving," judged by the tests which gave the most definitive results, "the average functional efficiency . . . progressively decreased with increased hours of driving."

In his foreword, Chairman Eastman states that the commission, by Division 5, has placed a copy of the report in the record in its two proceedings relating to the hours of service of drivers without holding a hearing for that purpose. It is indicated, however, that if any party to one or the other of these proceedings desires a hearing for the purpose of considering the report and for other related purposes, he may so petition the commission.

In concluding his foreword Chairman Eastman states that "... it would be advantageous to continue this pioneering investigation. Under the complex conditions surrounding the driving of motor vehicles today, there is need for all possible light on the factors which are contributing to accidents. The problem of evaluating the part which fatigue plays is by no means confined to the field of commercial transportation. Extreme conditions of fatigue are a common occurrence amongst drivers of passenger cars. The steps taken in this report, particularly the demonstration that a few simple but sensitive tests can be used for intensive measurement of fatigue,

RELEASE THE LATENT POWER...



"... recent boiler performances, however, have indicated clearly that the latent capacity which for many years has been built into locomotive boilers has remained locked up within them.

"... the tests of the Pennsylvania poppet-valve locomotive No. 5399, with valves and steam passages designed to remove the restrictions in steam flow between the boiler and cylinders, are a demonstration of latent capacity seldom given an opportunity for service. This locomotive reached a maximum hourly output of 21 lb. of steam per sq. ft. of evaporative heating surface. It also showed a still further increase in locomotive capacity because of improvement of the steam distribution in the cylinders. The steam required to develop a horsepower-hour was reduced 13.8 per cent at 40 miles an hour and nearly 32 per cent at 100 miles an hour."

(Reprinted from
RAILWAY AGE
May 28, 1941.)

that lies dormant in

Your
locomotives

The steam locomotive is possessed of latent power which now can be released by The Franklin System of Steam Distribution. This system, which is applicable to existing as well as new steam locomotives, is the result of years of experimentation, research and road tests and is offered to the railroads as a means of increasing train speed and load capacity without increasing the size of the locomotive.



FRANKLIN RAILWAY SUPPLY COMPANY, INC.

NEW YORK
CHICAGO

In Canada: FRANKLIN RAILWAY SUPPLY COMPANY, LIMITED, MONTREAL

June 14, 1941

may encourage others to turn their attention to this line of attack on the accident problem."

The report is printed in a book of about 300 pages, containing many tables, charts, and photographic illustrations. Copies are on sale by the Superintendent of Documents, Government Printing Office, Washington, D. C., at a price of 40 cents each (Public Health Bulletin No. 265, U. S. Public Health Service, Federal Security Agency).

Railways Receive Formal Pay Demands

Formal demands for pay increases amounting to an overall average increase of 41 per cent in railway payrolls were served upon the railroads of the United States on June 10 by 19 railway unions. This is the culmination of a "sparring match" that began some weeks ago, when the 14 non-operating brotherhoods demanded vacations with pay. While these hearings were going on, the 5 transportation unions served notice of a demand for a 30 per cent pay increase, with certain other emoluments such as materially increased crews on Diesel-electric locomotives. Not to be outdone by their transportation brothers, the non-operating unions abruptly broke off the negotiations on the vacation matter and came through with their current demands, which involve a 47 per cent increase. Meanwhile, as reported in the *Railway Age* for May 31 and June 7, the railroads in eastern and western territories served formal notice of their intent to revise existing agreements governing rules and work conditions to eliminate "feather-bed" rules.

An interesting feature of the formal demands received on June 10, is that they unanimously agree that the claims for increases, "if they cannot be settled on individual railways," be heard on a national rather than a regional basis. It may be noted, in passing, that the demands of the transportation unions alone, on the basis of current employment, represent an annual total of approximately \$190,000,000, which, coincidentally or otherwise, may be compared with the net income of the carriers last year, which was \$191,000,000.

After receipt of the demands on June 10, C. E. Johnston, chairman of the Western Association of Railway Executives, outlined what they would mean, if granted.

"The unions representing non-operating railway employees have served demands for a wage increase of 30 cents an hour," he said, "and for a minimum hourly wage of 70 cents. The present minimum wage in the railroad industry, made effective only last March by the federal government under the Fair Labor Standards Act, is 36 cents per hour. For those men now receiving this minimum, a pay increase of 95 per cent is being sought. For the men now receiving 40 cents an hour, the increase sought is 75 per cent: for the men now receiving 50 cents an hour, the increase sought is 60 per cent: for the men now receiving 60 cents an hour, the increase sought is 50 per cent. Over the entire non-operating group the wage increase demanded exceeds 47 per cent, equivalent,

under present condition, to an annual total of approximately \$580,000,000.

"In other words, the employees today have asked the railroads for wage increases averaging more than 41 per cent and amounting, in the aggregate, to some \$770,000,000 a year.

"It is obvious that nothing in the present situation of the railroad industry or of the nation as a whole justifies these exorbitant demands. It is equally obvious that the railroads cannot meet them. While earnings have recently, and perhaps temporarily, improved because of the increased volume of defense traffic moving, the placing of any such additional wage burden upon the carriers would return them to, if not below, the depths of the depression. We are not anxious to see 1932 return to the carriers.

"The public has a responsibility here as well as we do. Too often these controversies have been considered as family affairs between the managements on one hand and the employees on the other. This attitude just can't continue any longer. The national interest is too vitally affected. The basic theory of the law, under which labor disputes in the railroad industry may eventually be settled, contemplates that informed, active and vocal public opinion shall first reach, and then enforce, a fair decision. That responsibility is placed upon the public. If we are to avoid labor troubles, and eventual government ownership of the railroads, the public must accept its responsibilities. Our citizens must inform themselves regarding the facts; they must make up their minds; and they must take positive action to make their decision effective. They have a duty to perform. They must perform it."

As pointed out by Mr. Johnston in a statement issued on June 6, railway labor is now attempting to carry on simultaneously five separate attempts to secure more money. "The engineers," he said, "are endeavoring to change—and thus increase—the basis upon which their present wage scales are calculated. They are also trying to force the employment of extra and wholly unnecessary engineers upon Diesel-electric locomotives. The firemen, in a separate proceeding, are presenting similar demands. The fourteen 'non-operating' unions are demand annual vacations with pay, at a time when more work, and not less, is vital to the national interest.

"In announcing their wage program the non-operating brotherhoods stated that their present wages are low and grossly inadequate and that they have lagged behind those in other industries. Official government figures completely refute these statements. The latest government figures available, issued by the Department of Labor, cover the month of February, 1941. In that month, the average hourly earnings of all manufacturing workers were 69.2 cents. The average hourly earnings of all railway wage workers in that same month were 77 cents. This doesn't indicate any falling behind on the part of railway employees.

"The figures of average weekly earnings tell the same story. Again for the month of February, the average weekly earnings of factory workers were \$28.56. The average weekly earnings of all railway wage

workers amounted to \$36.58. The average for the railroad men was thus 28 per cent higher than that of the manufacturing workers. Do weekly earnings 28 per cent higher on the railroads than in manufacturing establishments constitute low and grossly inadequate wages, as claimed?

"There is nothing in the present economic situation—in the level of wages paid in other industries, in the cost of living, or in any other factor—to justify the wage demands with which the railroads are now confronted."

Meetings and Conventions

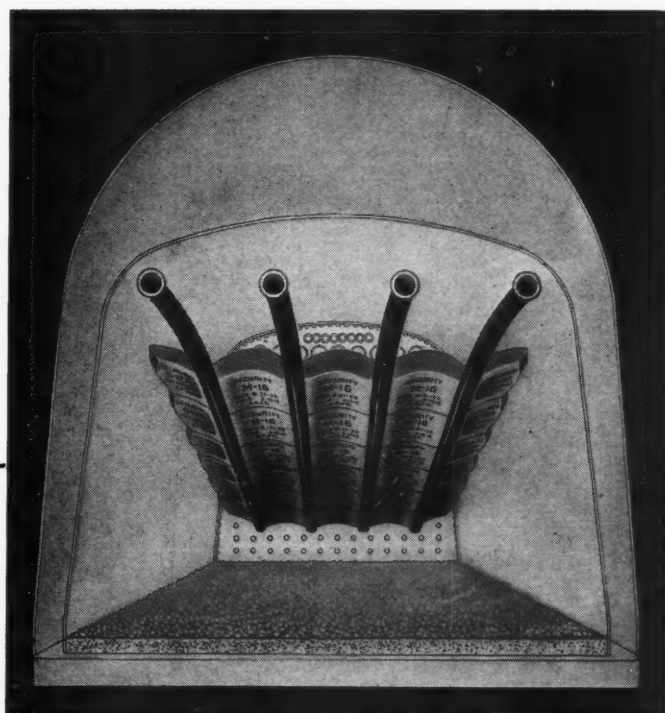
The following list gives names of secretaries, dates of next or regular meetings and places of meetings:

- ALLIED RAILWAY SUPPLY ASSOCIATION.—J. F. Gettrust, P. O. Box 5522, Chicago, Ill.
- AMERICAN ASSOCIATION OF FREIGHT TRAFFIC OFFICERS.—W. R. Curtis, F. T. R. M. & O. R. R., 327 S. La Salle St., Chicago, Ill.
- AMERICAN ASSOCIATION OF GENERAL BAGGAGE AGENTS.—E. P. Soebbing, 1431 Railway Exchange Bldg., St. Louis, Mo. Annual meeting, October 7-9, 1941, San Francisco, Cal.
- AMERICAN ASSOCIATION OF PASSENGER TRAFFIC OFFICERS.—B. D. Branch, C. R. R. of N. J., 143 Liberty St., New York, N. Y.
- AMERICAN ASSOCIATION OF RAILROAD SUPERINTENDENTS.—F. O. Whiteman, Room 332, Dearborn Station, Chicago, Ill.
- AMERICAN ASSOCIATION OF RAILWAY ADVERTISING AGENTS.—E. A. Abbott, Poole Bros., Inc., 85 W. Harrison St., Chicago, Ill. Annual meeting, January 16-17, 1942, St. Louis, Mo.
- AMERICAN ASSOCIATION OF SUPERINTENDENTS OF DINING CARS.—F. R. Borger, C. I. & L. Ry., 836 S. Federal St., Chicago, Ill.
- AMERICAN RAILWAY BRIDGE AND BUILDING ASSOCIATION.—F. O. Whiteman, Room 332, Dearborn Station, Chicago, Ill. Annual meeting, October 14-16, 1941, Hotel Stevens, Chicago, Ill.
- AMERICAN RAILWAY CAR INSTITUTE.—W. C. Tabbert, 19 Rector St., New York, N. Y.
- AMERICAN RAILWAY DEVELOPMENT ASSOCIATION.—G. E. Smith, New York Central R. R., La Salle Street Station, Chicago, Ill.
- AMERICAN RAILWAY ENGINEERING ASSOCIATION.—Works in cooperation with the Association of American Railroads, Engineering Division.—W. S. Lacher, 59 E. Van Buren St., Chicago, Ill. Annual meeting, March 17-19, 1942, Palmer House, Chicago, Ill.
- AMERICAN RAILWAY MAGAZINE EDITORS' ASSOCIATION.—M. W. Jones, Baltimore & Ohio R. R., 1105 B. & O. R. R. Bldg., Baltimore, Md.
- AMERICAN SHORT LINE RAILROAD ASSOCIATION.—J. H. Hunt, Tower Bldg., Washington, D. C. Annual meeting September 29-30, 1941, Hotel Morrison, Chicago, Ill.
- AMERICAN SOCIETY OF MECHANICAL ENGINEERS.—C. E. Davies, 29 W. 39th St., New York, N. Y. Semi-annual meeting, June 16-19, 1941, Hotel Muehlebach, Kansas City, Mo. Railroad Division, C. L. Combes, *Railway Age*, 30 Church St., New York, N. Y. Next meeting, June 17, 1941, Hotel Muehlebach, Kansas City, Mo.
- AMERICAN TRANSIT ASSOCIATION.—Guy C. Hecker, 292 Madison Ave., New York, N. Y. Annual meeting, September 27-October 2, 1941, Chalfonte-Haddon Hall, Atlantic City, N. J.
- AMERICAN WOOD PRESERVERS' ASSOCIATION.—H. L. Dawson, 1427 Eye St. N. W., Washington, D. C. Annual meeting January 27-29, 1942, Nicollet Hotel, Minneapolis, Minn.
- ASSOCIATION OF AMERICAN RAILROADS.—H. J. Forster, Transportation Bldg., Washington, D. C.
- Operations and Maintenance Department.—Charles H. Buford, Vice-President, Transportation Bldg., Washington, D. C.
- Operating-Transportation Division.—L. R. Knott, 59 E. Van Buren St., Chicago, Ill.
- Operating Section.—J. C. Caviston, 30 Vesey St., New York, N. Y.
- Transportation Section.—L. R. Knott, 59 E. Van Buren St., Chicago, Ill.
- Fire Protection and Insurance Section.—W. F. Steffens, New York Central, Room 3317, 230 Park Avenue, New York, N. Y. Annual meeting, October 14-15, 1941, Congress Hotel, Chicago, Ill.
- Freight Station Section.—L. R. Knott, 59 E. Van Buren St., Chicago, Ill. Annual meeting, June 17-19, 1941, Statler Hotel, St. Louis, Mo.
- Medical and Surgical Section.—J. C. Caviston, 30 Vesey St., New York, N. Y.
- Protective Section.—J. C. Caviston, 30

Continued on next left-hand page

A CORRECT BRICK ARCH GUARANTEES FULL FUEL ECONOMY

There is a carefully worked out design of the Security Brick Arch for every class of locomotive . . . This design guarantees maximum efficiency both as to fuel economy and hauling capacity . . . In modernizing existing power and in maintaining locomotives in active service, be sure the correct brick arch design is installed and be sure it is completely maintained.



*There's More to
SECURITY ARCHES
Than Just Brick*

**HARBISON-WALKER
REFRACTORIES CO.**
Refractory Specialists



**AMERICAN ARCH CO.
INCORPORATED**
60 EAST 42nd STREET, NEW YORK, N. Y.
*Locomotive Combustion
Specialists*

Vesey St., New York, N. Y. Annual meeting, June 24-26, 1941, Shirley-Savoy Hotel, Denver, Colo. Safety Section.—J. C. Caviston, 30 Vesey St., New York, N. Y.

Telegraph and Telephone Section.—W. A. Fairbanks, 30 Vesey St., New York, N. Y. Annual meeting September 23-25, 1941, Gibson Hotel, Cincinnati, Ohio.

Engineering Division.—W. S. Lacher, 59 E. Van Buren St., Chicago, Ill. Annual meeting, March 17-19, 1942, Palmer House, Chicago, Ill.

Construction and Maintenance Section.—W. S. Lacher, 59 E. Van Buren St., Chicago, Ill. Annual meeting, March 17-19, 1942, Palmer House, Chicago, Ill.

Electrical Section.—W. S. Lacher, 59 E. Van Buren St., Chicago, Ill. Annual meeting, October 28, 1941, Hotel Sherman, Chicago, Ill.

Signal Section.—R. H. C. Balliet, 30 Vesey St., New York, N. Y. Annual meeting, September 30-October 2, 1941, Broadmoor Hotel, Colorado Springs, Colo.

Mechanical Division.—Arthur C. Brown, 59 E. Van Buren St., Chicago, Ill. Annual meeting June 19-20, 1941, Hotel Jefferson, St. Louis, Mo.

Electrical Section.—J. A. Andreucetti, 59 E. Van Buren St., Chicago, Ill. Annual meeting, October 28-30, 1941, Hotel Sherman, Chicago, Ill.

Purchases and Stores Division.—W. J. Farrell, Transportation Bldg., Washington, D. C. Annual meeting, July 10-11, 1941, Palmer House, Chicago, Ill.

Freight Claim Division.—Lewis Pilcher, 59 E. Van Buren St., Chicago, Ill. Annual meeting, June 10-12, 1941, Cosmopolitan Hotel, Denver, Colo.

Motor Transport Division.—George M. Campbell, Transportation Bldg., Washington, D. C.

Car-Service Division.—E. W. Coughlin, Transportation Bldg., Washington, D. C.

Finance, Accounting, Taxation and Valuation Department.—E. H. Bunnell, Vice-President, Transportation Bldg., Washington, D. C.

Accounting Division.—E. R. Ford, Transportation Bldg., Washington, D. C. Annual meeting June 24-26, 1941, Cosmopolitan Hotel, Denver, Colo.

Treasury Division.—E. R. Ford, Transportation Bldg., Washington, D. C. Annual meeting, September 24-26, 1941, Broadmoor Hotel, Colorado Springs, Colo.

Traffic Department.—A. F. Cleveland, Vice-President, Transportation Bldg., Washington, D. C.

ASSOCIATION OF RAILWAY CLAIM AGENTS.—F. L. Johnson, Claim Agent, Alton R. R., 340 W. Harrison St., Chicago, Ill. Annual meeting, June 11-13, 1941, Browne Palace Hotel, Denver, Colo.

BRIDGE AND BUILDING SUPPLY MEN'S ASSOCIATION.—R. Y. Barham, Armco Railroad Sales Company, 310 S. Michigan Ave., Chicago, Ill. Exhibit in connection with American Railway Bridge and Building Association Convention, October 14-16, 1941, Hotel Stevens, Chicago, Ill.

CANADIAN RAILWAY CLUB.—C. R. Crook, 4415 Marcell Ave., N. D. G., Montreal, Que. Regular meetings, second Monday of each month except June, July and August, Windsor Hotel, Montreal, Que.

CAR DEPARTMENT ASSOCIATION OF ST. LOUIS, MO.—J. J. Sheehan, 1101 Missouri Pacific Bldg., St. Louis, Mo. Regular meetings, third Tuesday of each month, except June, July and August, Hotel De Soto, St. Louis, Mo.

CAR DEPARTMENT OFFICERS' ASSOCIATION.—Frank Kartheiser, Chief Clerk, Mechanical Dept., C. B. & Q., Chicago, Ill. Annual meeting September 23-24, 1941, Hotel Sherman, Chicago, Ill.

CAR FOREMEN'S ASSOCIATION OF CHICAGO.—G. K. Oliver, 8238 S. Campbell Ave., Chicago, Ill. Regular meetings, second Monday of each month, except June, July and August, La Salle Hotel, Chicago, Ill.

CENTRAL RAILWAY CLUB OF BUFFALO.—Mrs. M. D. Reed, 1817 Hotel Statler, McKinley Square, Buffalo, N. Y. Regular meetings, second Thursday of each month, except June, July and August, Hotel Statler, Buffalo, N. Y.

EASTERN ASSOCIATION OF CAR SERVICE OFFICERS.—J. T. Bougher, 424 W. 33rd St. (11th floor), New York, N. Y.

LOCOMOTIVE MAINTENANCE OFFICERS' ASSOCIATION.—J. E. Goodwin, Missouri Pacific R. R., No. Little Rock, (P. O. Little Rock), Ark. Annual meeting, September 23-24, 1941, Hotel Sherman, Chicago, Ill.

MASTER BOILER MAKERS' ASSOCIATION.—A. F. Stiglmeier, 29 Parkwood St., Albany, N. Y. Annual meeting, September 23-24, 1941, Hotel Sherman, Chicago, Ill.

NATIONAL ASSOCIATION OF RAILROAD AND UTILI-

TIES COMMISSIONERS.—Ben Smart, 7413 New Post Office Bldg., Washington, D. C. Annual meeting, August 26-29, 1941, St. Paul Hotel, St. Paul, Minn.

NATIONAL RAILWAY APPLIANCE ASSOCIATION.—C. H. White, Room 1826, 208 S. La Salle St., Chicago, Ill. Exhibit in connection with A. R. E. A. Convention, March 16-19, 1942, International Amphitheatre, Chicago, Ill.

NEW ENGLAND RAILROAD CLUB.—W. E. Cade, Jr., 683 Atlantic Ave., Boston, Mass. Regular meetings, second Tuesday of each month, except June, July, August and September, Hotel Touraine, Boston, Mass.

NEW YORK RAILROAD CLUB.—D. W. Pye, 30 Church St., New York, N. Y. Regular meetings, third Thursday of each month, except June, July, August, September, and December, 29 W. 39th St., New York, N. Y.

PACIFIC RAILWAY CLUB.—William S. Wollner, P. O. Box 3275, San Francisco, Cal. Regular meetings, second Thursday of each alternate month, at Palace Hotel, San Francisco, and second Friday of each alternate month, at Hotel Hayward, Los Angeles.

RAILWAY BUSINESS ASSOCIATION.—P. H. Middleton, First National Bank Bldg., Chicago, Ill.

RAILWAY CLUB OF PITTSBURGH.—J. D. Conway, 1647 Oliver Bldg., Pittsburgh, Pa. Regular meetings, fourth Thursday of each month, except June, July and August, Fort Pitt Hotel, Pittsburgh, Pa.

RAILWAY ELECTRIC SUPPLY MANUFACTURERS' ASSOCIATION.—J. McC. Price, Allen-Bradley Company, 600 W. Jackson Blvd., Chicago, Ill. Annual meeting and exhibit, October 28-30, 1941, Hotel Sherman, Chicago, Ill.

RAILWAY FUEL AND TRAVELING ENGINEERS' ASSOCIATION.—T. Duff Smith, Room 811, Utilities Bldg., 327 S. La Salle St., Chicago, Ill. Annual meeting, September 23-24, 1941, Hotel Sherman, Chicago, Ill.

RAILWAY SUPPLY MANUFACTURERS' ASSOCIATION.—J. D. Conway, 1647 Oliver Bldg., Pittsburgh, Pa.

RAILWAY TELEGRAPH AND TELEPHONE APPLIANCE ASSOCIATION.—G. A. Nelson, Waterbury Battery Company, 30 Church St., New York, N. Y. Meets with Telegraph and Telephone Section of A. A. R.

RAILWAY TIE ASSOCIATION.—Roy M. Edmonds, 903 Syndicate Trust Bldg., St. Louis, Mo.

ROADMASTERS' AND MAINTENANCE OF WAY ASSOCIATION.—F. O. Whiteman, Room 332, Dearborn Station, Chicago, Ill. Annual meeting, September 16-18, 1941, Hotel Stevens, Chicago, Ill.

SIGNAL APPLIANCE ASSOCIATION.—G. A. Nelson, Waterbury Battery Company, 30 Church St., New York, N. Y. Meets with A. A. R. Signal Section.

SOUTHERN AND SOUTHWESTERN RAILWAY CLUB.—A. T. Miller, 4 Hunter St., S. E., Atlanta, Ga. Regular meetings, third Thursday in January, March, May, July, September and November, Ansley Hotel, Atlanta, Ga.

SOUTHERN ASSOCIATION OF CAR SERVICE OFFICERS.—D. W. Brantley, C. of Ga. Ry., Savannah, Ga. Semi-annual meeting, July 24, 1941.

TORONTO RAILWAY CLUB.—D. M. George, P. O. Box 8, Terminal "A," Toronto, Ont. Regular meetings, fourth Monday of each month, except June, July and August, Royal York Hotel, Toronto, Ont.

TRACK SUPPLY ASSOCIATION.—Lewis Thomas, O. and C. Company, 59 E. Van Buren St., Chicago, Ill. Exhibit in connection with Roadmasters and Maintenance of Way Association Convention, September 15-18, 1941, Hotel Stevens, Chicago, Ill.

UNITED ASSOCIATIONS OF RAILROAD VETERANS.—Roy E. Collins, 112 Hatfield Place, Port Richmond, Staten Island, N. Y. Annual meeting, October 11-12, 1941, Cleveland, Ohio.

WESTERN RAILWAY CLUB.—E. E. Thulin (Executive Secretary) Earl Thulin Company, 122 S. Michigan Ave., Chicago, Ill. Regular meetings, third Monday of each month, except June, July, August and September, Hotel Sherman, Chicago, Ill.

Supply Trade

Stanley A. McCaskey has been elected assistant secretary of the **Allegheny Ludlum Steel Corporation**, Pittsburgh, Pa.

Norman L. Deuble, formerly assistant to the vice-president of the **Copperweld Steel Company**, Warren, Ohio, has been appointed manager of sales.

The Marquette Railway Supply Company, Chicago, has been appointed the railroad representative of the **Elwell-Parker Electric Company**, Chicago, in the Chicago district.

Alva E. Radcliffe, sales representative of **Thomas A. Edison, Inc.**, with headquarters at Chicago, has been promoted to Cleveland district manager, to succeed **Peter R. Nelson**, deceased.

A. F. Dohn, vice-president in charge of tool steel sales of the **Allegheny Ludlum Steel Corporation**, has retired from active service and will continue with the company in a consulting capacity as a vice-president.

C. A. Brown, formerly of the **Washington, D. C.**, office of the **American Locomotive Company**, has been appointed district sales manager with headquarters in the Red Rock Building, 187 Spring St., N. W., Atlanta, Ga.

E. C. Gunther, formerly a buyer in the purchasing department of the **Chicago, Burlington & Quincy**, has been appointed district manager, midwest territory, of the **Duff-Norton Manufacturing Company**, with headquarters at Chicago, to succeed **Alex S. Anderson**, deceased.

Samuel F. Pryor, Jr., has severed his connection with the **American Brake Shoe & Foundry Co.** and the Southern Wheel division of that company and has been elected vice-president and assistant to the president of the **Pan-American Airways Corporation**. Mr. Pryor's name was incorrectly given in this connection in the *Railway Age* of June 7, page 1027, as Samuel T. Pryor.

OBITUARY

Dudley Brewster Bullard, vice-president of the **Bullard Company** of Bridgeport, Conn., died June 10 after a long illness.

Louis E. Jones, in charge of the advertising and accounts adjustment departments of the **American Steel Foundries**, Chicago, died at the **Hinsdale Sanitarium**, Hinsdale, Ill., on June 7 after an illness of several weeks.

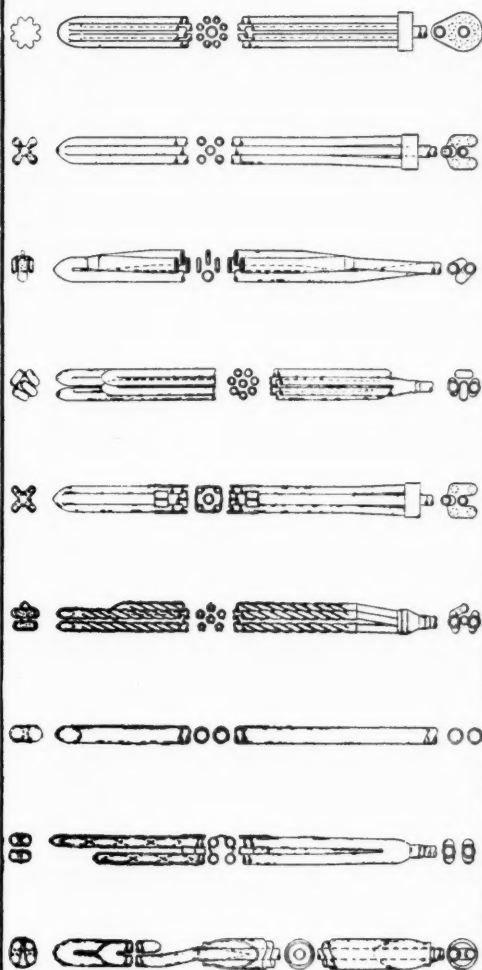
Charles E. Miller, a representative in Chicago of the **Universal Locomotive Arch Company**, died suddenly of heart failure in that city on June 8. Mr. Miller has been with the **Universal Locomotive Arch Company** for 20 years and previously served with the **American Arch Co., Inc.**, and the **Chicago & North Western**.

Construction

THE TERMINAL RAILROAD ASSOCIATION OF ST. LOUIS.—A contract has been awarded **H. B. Deal & Co., Inc.**, St. Louis, Mo., for the construction of a \$45,000 fire-proof building to replace the old frame mail-handling shed at the **Union Station**, St. Louis. The new building will measure 60 ft. by 180 ft. and will be of brick and reinforced concrete construction. A belt conveyor system will be installed for handling the mail to a saw-tooth platform from which it will be loaded directly into trucks.

Superheater Development

Several of the many superheater designs that were developed and tested.



1—30 years ago, when the locomotive had reached its limit of power with saturated steam, the Type A superheater gave the locomotive more hauling power and a more economical fuel and water rate.

2—A decade or so later, there was a demand for boilers with a further increase in sustained capacities and still higher boiler efficiencies. This demand brought about the development of the Elesco small flue superheater which makes it possible for a locomotive of a given size and weight to develop as much as 20% higher sustained maximum horsepower, due to an increase in both evaporating and superheating surfaces.

3—While the small flue type superheater represents the best locomotive superheater design, there was a demand for higher efficiencies from old locomotives with large flue boilers. After many years of research a unit was developed which met the need for increased superheat without change of fluesheet layout, header, steam pipes or drafting. It is classified as H-A. Installed in place of the standard Type A superheater, it effects about a 5% increase in cylinder efficiency, which is reflected in either a relative fuel and water saving or an equivalent increase in power. Several of the many designs developed and tested are shown here.

These outstanding achievements were the result of superheater research and the adoption of the best designs.

ELESCO SUPERHEATER DESIGNS ARE THE RESULT OF PROGRESSIVE DEVELOPMENT . . . AND ARE THE BEST THAT SCIENCE HAS BEEN ABLE TO DEVISE.



SUPERHEATERS • FEEDWATER HEATERS
AMERICAN THROTTLES • STEAM DRYERS
EXHAUST STEAM INJECTORS • PYROMETERS

THE
SUPERHEATER
C O M P A N Y

Representative of
AMERICAN THROTTLE COMPANY, INC.
60 East 42nd Street, NEW YORK
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Montreal, Canada
THE SUPERHEATER COMPANY, LTD.

Equipment and Supplies

Wabash to Spend \$3,606,000

The Wabash has been authorized by the district court to purchase two 660-hp. Diesel-electric switching locomotives at a cost of \$120,000 and 25 hopper cars at a cost of \$98,000, and to build in its own shops 1,000 box cars at a cost of \$3,388,000.

LOCOMOTIVES

Correction

THE CANADIAN PACIFIC was incorrectly reported in the *Railway Age* of May 24 as ordering 20 4-6-2 type locomotives from the Montreal Locomotive Works. The order for these locomotives was placed with the Canadian Locomotive Works.

THE LOUISVILLE & NASHVILLE is in the market for from 18 to 22 steam passenger locomotives.

THE PENNSYLVANIA is reported to be inquiring for two or three 0-6-0 type steam locomotives.

THE UNITED STATES NAVY, Bureau of Supplies and Accounts, is asking for bids, June 24, on one 50-ton Diesel-electric locomotive—Schedule 7375.

THE U. S. WAR DEPARTMENT has ordered one 45-ton and four 60-ton Diesel-electric switching locomotives from the General Electric Company.

THE ATLANTIC COAST LINE has placed an order for 9 Diesel-electric passenger locomotives of 2000-hp. each with the Electro-Motive Corporation.

THE ALABAMA, TENNESSEE & NORTHERN has ordered one 45-ton Diesel-electric switching locomotive from the General Electric Company.

THE WESTERN PACIFIC has ordered three 5400-hp. Diesel-electric locomotives from the Electro-Motive Corp. The expected purchase of this equipment was reported in the *Railway Age* of May 10.

THE CANADIAN NATIONAL has placed orders for 20 Diesel-electric locomotives of 1,000 hp., allocating 15 to the Electro-Motive Corporation and five to the American Locomotive Company.

THE UNITED STATES ARMY, Ordnance Department,—Commanding Officer, Jefferson Proving Ground, Madison, Ind., is asking for bids, June 18, on two 70-ton Diesel-electric locomotives—C. R. 142.

THE NEW YORK, CHICAGO & ST. LOUIS has ordered fifteen 2-8-2 type freight locomotives with 22,000 gal. tenders from the Lima Locomotive Works. The company was reported in the market for this equipment in the *Railway Age* of May 31.

THE CANADIAN NATIONAL has ordered 25 4-8-4 type steam locomotives from the Montreal Locomotive Works. The ex-

pected purchase of these locomotives was reported in the *Railway Age* of February 22.

THE LOUISVILLE & NASHVILLE has placed orders for a total of 12 660-hp. Diesel-electric switching locomotives, allocating three each to the Baldwin Locomotive Works, the American Locomotive Company and the Electro-Motive Corporation.

THE NASHVILLE, CHATTANOOGA & ST. LOUIS has ordered ten 4-8-4 type steam road locomotives from the American Locomotive Company. The inquiry for these locomotives was reported in the *Railway Age* of May 31.

THE NEW YORK CENTRAL has placed orders for 15 Diesel-electric switching locomotives as follows:

7 600-hp.—Electro-Motive Corporation
1 600-hp.—Baldwin Locomotive Works
7 350-hp.—General Electric Company

The inquiry for this equipment was reported in the *Railway Age* of May 17.

FREIGHT CARS

Burlington Approves Large Equipment Program

Directors of the Chicago, Burlington & Quincy have approved a 1942 equipment program calling for the construction of 4,425 freight cars in its shops at Galesburg, Ill., and Havelock, Neb., for the Burlington, the Colorado & Southern and the Ft. Worth & Denver City. The purchase of locomotives and passenger-train cars is still being considered. The freight cars to be constructed in 1942 are as follows:

C. B. & Q.
300 53½-ft. 50-ton flat
250 50-ton hopper
200 40-ton stock
70 65-ft. mill type gondola
50 70-ton all-steel covered hopper
250 70-ton hopper
1,500 40½-ft. 50-ton steel sheathed box
500 50-ft. 50-ton steel sheathed box
175 50-ft. automobile with loading devices

3,295

C. & S.
100 53½-ft. flat
30 65½-ft. mill type gondola
500 40½-ft. 50-ton steel sheathed box

630

Ft. W. & D. C.
500 40½-ft. 50-ton steel sheathed box

THE MIDLAND VALLEY has ordered five box cars of 50 tons' capacity from the Mt. Vernon Car Manufacturing Company.

THE UNITED STATES NAVY, Bureau of Supplies and Accounts, is asking for bids, June 24, on 26 36-ft. 6-in. flat cars of 30 tons' capacity—Schedule 7378.

THE CHICAGO, ST. PAUL, MINNEAPOLIS & OMAHA is reported to be in the market for 1,000 box cars of 50 tons' capacity and 250 gondola cars of 50 tons' capacity.

THE NORTHERN PACIFIC has ordered 1,350 50-ton box cars from the American Car and Foundry Company instead of 1,500 as reported in the *Railway Age* of June 7. The railroad will build the additional 150 box cars in its own shop at Laurel, Mont.

THE NORFOLK & WESTERN has placed orders for a total of 1,500 steel hopper cars of 70 tons' capacity, allocating 1,000 to the

Virginia Bridge Company and 500 to the Bethlehem Steel Company. An inquiry for 1,000 of these cars was reported in the *Railway Age* of May 31.

THE ELGIN, JOLIET & EASTERN has ordered 500 all steel side dump hopper cars of 70 tons' capacity allocating 250 each to the American Car & Foundry Co. and the Ralston Steel Car Company.

THE WABASH will build 1,000 box cars in its own shops and purchase an additional 25 hopper cars. The court authorization for this equipment is reported elsewhere in this column.

THE UNITED STATES ARMY, Contracting Officer, Engineering Department, Washington, D. C., is inquiring for bids June 12, on 50 tank cars of 10,000 gal. capacity—Inv. 211.

THE SEABOARD AIR LINE is inquiring for 1250 cars as follows: 700 50-ton box cars with single doors; 300 50-ton box cars with double doors; 100 flat cars; 100 70-ton hopper cars and 50 covered hopper cement cars.

THE AKRON, CANTON & YOUNGSTOWN is reported to be in the market for 30 gondola cars of 70 tons' capacity. These are in addition to an inquiry by this company for 100 50-ton hopper cars which was reported in the *Railway Age* of May 31.

THE GULF, MOBILE & OHIO has ordered 850 40-ft. 6-in. box cars of 40 tons' capacity and 150 steel twin hopper cars of 50 tons' capacity from the American Car & Foundry Co. An inquiry for this order was reported in the *Railway Age* of May 31.

THE SEABOARD AIR LINE has issued inquiries for a total of 1,250 freight cars comprising the following:

300 50-ton, all-steel double-door box cars
700 50-ton, all steel single-door box cars
100 70-ton, all-steel hopper cars
50 70-ton, all-steel covered cement-hopper cars
100 50-ton, all-steel flat cars

PASSENGER CARS

THE WESTERN PACIFIC has ordered four passenger-train chair cars from the Edward G. Budd Mfg. Co.

THE CHICAGO, INDIANAPOLIS & LOUISVILLE is reported to have ordered 7 baggage cars from the St. Louis Car Company. The inquiry for this equipment was reported in the *Railway Age* of March 22.

THE ATLANTIC COAST LINE has ordered 16 streamlined passenger-train cars from the Edward G. Budd Manufacturing Company. The cars comprise the following:

8 coach
3 coach-baggage-dormitory
1 dining-lounge
2 tavern
2 dining

IRON AND STEEL

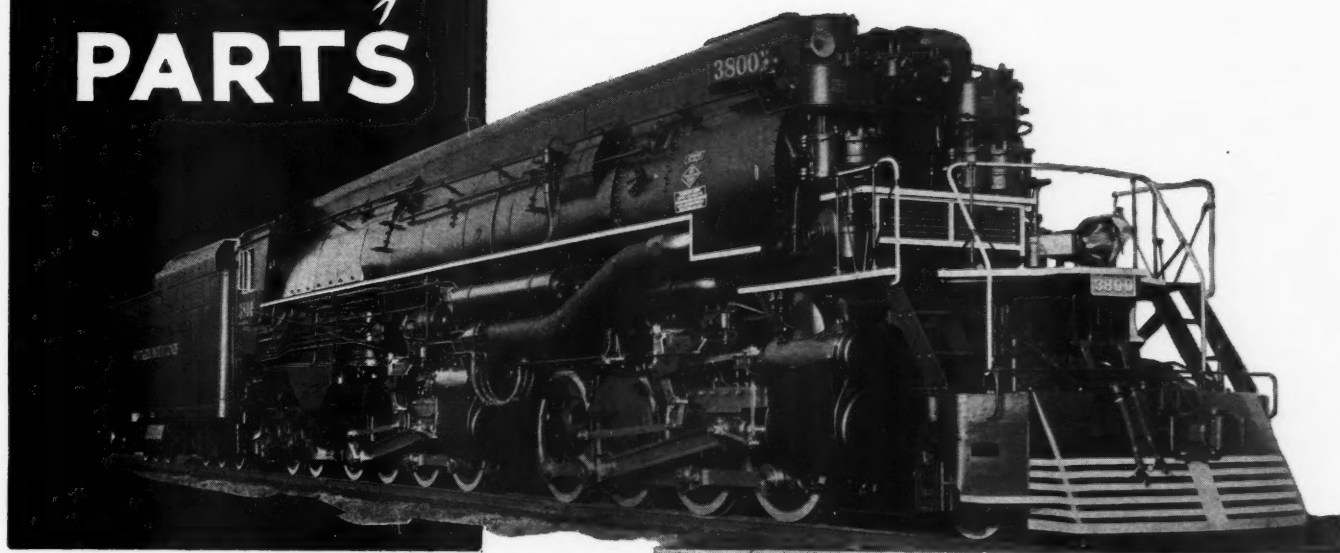
THE CHICAGO, ROCK ISLAND & PACIFIC has been authorized by the district court to purchase 35,000 tons of new rails and necessary angle bars, frogs and switches for its rail renewal requirements in 1942.

Continued on next left-hand page

HSGI

Wear Resisting

PARTS



Increase Availability

MODERN power has a high earning capacity because it is out on the road in revenue service most of the time.

Naturally the quality of the wearing parts is a vital factor — in other words you cannot expect high availability with ordinary materials.

Today, more than ever before you need the super-service built into HUNT-SPILLER *Air Furnace* GUN IRON.

The resistance of this material to frictional wear and high superheat temperatures insures dependable performance, maximum monthly mileage, economical use of fuel and minimum maintenance costs.

HSGI

Reg. U.S. Trade Mark

Cylinder Bushings
Cylinder Packing Rings
Pistons or Piston Bull Rings
Valve Bushings
Valve Packing Rings
Valve Bull Rings
Crosshead Shoes
Hub Liners
Shoes and Wedges
Floating Rod Bushings

Finished Parts

Dunbar Sectional Type Packing
Duplex Sectional Type Packing
for Cylinders and Valves
(Duplex Springs for Above)
Sectional Snap Rings
Cylinder Snap Rings
Valve Rings All Shapes
Light Weight Valves
Cylinder Liners and Pistons
for Diesel Service

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Export Agent for Latin America:

International Rwy. Supply Co., 30 Church Street, New York, N. Y.

HUNT-SPILLER

GUN IRON

Air Furnace

Financial

ATLANTIC & NORTH CAROLINA.—Note.—This company has asked the Interstate Commerce Commission for authority to issue a 10-year note for \$200,000, the proceeds to be loaned to the Atlantic & East Carolina for cross-tie replacements. The note will bear interest at three per cent and will be sold to the state of North Carolina.

BALTIMORE & OHIO.—Abandonment by the Confluence & Oakland.—Upon a further consideration of the record the Interstate Commerce Commission has reopened for reargument before the full commission its decision in Finance Docket No. 12742, in which Division 4 authorized the Confluence & Oakland and the Baltimore & Ohio, respectively, to abandon a line and the operation thereof, extending from Confluence & Oakland Junction, Pa., south to Kendall, Md., 19.8 miles. A review of Division 4's decision was given in the *Railway Age* of March 22, page 545.

BOSTON & MAINE.—Bonds of the Peterborough & Hillsborough.—The Peterborough & Hillsborough has asked the Interstate Commerce Commission for authority to extend to July 1, 1951, the time of payment of \$100,000 of its first mortgage $4\frac{1}{2}$ per cent bonds, dated July 1, 1897, due on July 1, 1917, and successively extended to July 1, 1941.

BURLINGTON - ROCK ISLAND.—Abandonment and Operation.—This company has been authorized by Division 4 of the Interstate Commerce Commission to abandon operation under trackage rights over lines of the Texas & New Orleans; Galveston, Harrisburg & San Antonio; and the Southern Pacific Terminal between Houston, Tex., and Galveston, 51 miles. At the same time Division 4 authorized this company to operate under trackage rights over a line of the Gulf, Colorado & Santa Fe between the same points, 47.2 miles.

CHESAPEAKE & OHIO.—Equipment Trust Certificates.—This company has been authorized by Division 4 of the Interstate Commerce Commission to assume liability for \$3,100,000 of $1\frac{5}{8}$ per cent serial equipment trust certificates, maturing in 10 equal annual installments of \$310,000 on June 15 in each of the years from 1942 to 1951, inclusive. The issue has been sold at 100.111 to Halsey, Stuart & Co., Inc., and its associates, making the average annual cost approximately 1.605 per cent.

CHICAGO & NORTH WESTERN.—Equipment trust certificates.—This road has awarded an issue of \$2,325,000 equipment trust certificates to a group headed by Harris, Hall & Co., Chicago, on a bid of 100.261 for 2s. The certificates, which mature serially in from one to ten years, were re-offered at prices to yield 0.40 to 2.35 per cent, according to maturity.

CHICAGO & NORTH WESTERN.—Plans Payment of Nine Millions.—Charles M. Thomson, trustee, has sent copies of a petition to the counsel for all interested parties, asking authority to distribute \$9,028,315 to security holders. The disbursements

would be on the basis of the new securities to be issued in exchange for the old, subject to readjustments to conform to the plan of reorganization as finally confirmed. The petition will be presented to Federal Judge John P. Barnes on June 23, which date will coincide with the hearing on whether the proposed plan of reorganization is to be confirmed. The nine million dollars represents earnings set aside to pay fixed and contingent charges. Mr. Thomson announced that cash on hand on June 1 was \$29,515,400.

CHICAGO UNION STATION.—Bond issue.—This terminal company has sold an issue of \$6,860,000 of serial bonds to a syndicate headed by Central Republic Company, Chicago, on an interest cost basis of 1.83 per cent, following competitive bidding in which eleven bids were submitted. The bonds, due semi-annually 1941 to 1951, inclusive, bear interest rates ranging from 1.05 to 2.10 per cent. They were re-offered by the syndicate at prices to yield from 0.25 to 2.20, according to maturity.

DENVER & RIO GRANDE WESTERN.—Abandonment.—The Interstate Commerce Commission, acting through Commissioner Porter, has again postponed from June 10 to July 1 the effective date of its order in Finance Docket No. 12829, the case wherein Division 4 authorized this company to abandon its 125-mile narrow-gauge line extending from Antonito, Colo., to Santa Fe, N. Mex. Details of a special Senate interstate commerce subcommittee report recommending that the commission reverse itself and either deny the abandonment or indefinitely postpone it were given in last week's issue.

FLORIDA EAST COAST.—Reorganization.—Division 4 of the Interstate Commerce Commission has denied the Brotherhood of Locomotive Firemen and Enginemen the right to intervene in reorganization proceedings of this company under section 77 of the Bankruptcy Act. The labor organization had charged in a brief filed with the commission, details of which were given in the *Railway Age* of May 10, page 812, that the present management of the F. E. C. is discriminating against white men by using negroes as firemen and refusing to hire white men. The union had further asked the commission to permit it to intervene and to refuse to approve all pending plans of reorganization for the road which contemplated the retention of the present management. Division 4's order found that the union "has failed to show any interest in the proceeding entitling it to intervene therein."

MONTOUR.—Equipment Trust Notes.—This company has been authorized by Division 4 of the Interstate Commerce Commission to issue \$500,000 of 1.04 per cent equipment trust notes, maturing in five equal annual installments of \$100,000 on June 16 in each of the years from 1942 to 1946, inclusive. The issue has been sold at par and accrued interest based on a rate of 1.04 per cent per year to Evans, Stillman & Co.

LOUISVILLE & NASHVILLE.—Equipment Trust Certificates.—This company has been

authorized by Division 4 of the Interstate Commerce Commission to assume liability for \$4,970,000 of $1\frac{5}{8}$ per cent serial equipment trust certificates, maturing in 10 equal annual installments of \$497,000 on June 15 in each of the years from 1942 to 1951, inclusive. The issue has been sold at 100.0777 to the Central Hanover Bank & Trust Company, making the average annual cost to the company approximately 1.61 per cent.

NEW YORK, CHICAGO & ST. LOUIS.—Equipment Trust Certificates.—This company has been authorized by Division 4 of the Interstate Commerce Commission to assume liability for \$1,250,000 of $1\frac{3}{4}$ per cent serial equipment trust certificates, maturing in 10 equal annual installments of \$125,000 on June 15 in each of the years from 1942 to 1951, inclusive. The issue has been sold at 100.047 to Halsey, Stuart & Co., Inc., and associates, making the average annual cost to the company approximately 1.745 per cent.

NEW YORK, NEW HAVEN & HARTFORD.—Equipment Trust Certificates.—This company has asked the Interstate Commerce Commission for authority to assume liability for \$2,890,000 of equipment trust certificates, maturing in 10 equal annual installments of \$289,000 on July 1 in each of the years from 1942 to 1951, inclusive. The proceeds will be used as part of the purchase price of new equipment costing a total of \$3,618,000 and consisting of 10 100-ton Diesel-electric switching locomotives, six 44-ton Diesel-electric switching locomotives, and 1,000 all-steel box cars.

NEW YORK, NEW HAVEN & HARTFORD.—Abandonment.—This company has been authorized by Division 4 of the Interstate Commerce Commission to abandon a line extending from Orange, Conn., westerly to a point near Derby Junction, 3.4 miles. In a previous proceeding, decided May 6, 1938, the company had asked for permission to abandon a line extending from West Haven, Conn., through Orange to Derby, 8.2 miles, including the line in question. At that time Division 4 permitted abandonment of the portion from Orange, Conn., to West Haven, but denied authority for the remainder without prejudice to renewal of the application at the expiration of two years if the volume of traffic became insufficient to warrant the continued operation.

PERE MARQUETTE.—Equipment Trust Certificates.—This company has been authorized by Division 4 of the Interstate Commerce Commission to assume liability for \$2,775,000 of $2\frac{1}{4}$ per cent equipment trust certificates, maturing in 15 equal annual installments of \$185,000 on June 1 in each of the years from 1942 to 1956, inclusive. The issue has been sold at 100.233 to Lazard Freres & Co. and Kidder Peabody & Co., making the average annual cost to the company approximately 2.09 per cent.

SOUTHERN PACIFIC.—Operation by the Texas & New Orleans.—The Texas & New Orleans has asked the Interstate Commerce Commission for authority to discontinue operations over tracks of the Chi-

ago, Rock Island & Gulf between Fort Worth, Tex., and Dallas, 36.5 miles. At the same time the T. & N. O. has requested authority from the commission to use tracks of the Chicago, Rock Island & Gulf between Fort Worth, Tex., and North Fort Worth, 1.3 miles of single track and 2.6 miles of double track. The new arrangement, according to the petition, will permit the T. & N. O. to deliver cars directly to the St. Louis Southwestern and the Fort Worth Belt without being forced to utilize the services of an intermediate carrier.

Abandonment.—The Texas & New Orleans has asked the Interstate Commerce Commission for authority to abandon a line extending from Luling, Tex., to Lockhart, 16.7 miles.

TEXAS & PACIFIC.—**Bonds.**—Division 4 of the Interstate Commerce Commission has modified its order of March 24, 1939, so as to permit this company to pledge and repledge to and including June 30, 1943, \$10,000,000 of its general refunding mortgage five per cent bonds, series D, as collateral security for any short-term notes it may issue.

WESTERN MARYLAND. — **Greenbrier, Cheat & Elk Bonds.**—The Greenbrier, Cheat & Elk, on May 30, notified holders of its first mortgage gold 5s, due July 15, 1944, and of its West Virginia Midland Extension first mortgage gold 5s, due January 15, 1954, that it will redeem on July 15 all outstanding bonds under the two mortgages at 100 per cent of principal amount together with accrued interest to date. Holders are asked to present bonds for redemption and payment on or after July 15 at the Union Trust Company of Maryland, Baltimore, Md., or at the Irving Trust Company, New York.

The Western Maryland acquired the entire outstanding capital stock of the G., C. & E. from the West Virginia Pulp & Paper Co. in November, 1927, and assumed payment of principal and interest on those bonds as payment therefor.

Dividends Declared

Cincinnati, New Orleans & Texas Pacific.—Irregular, \$3.00, payable June 25 to holders of record June 9.
Joliet & Chicago.—Stamped, \$1.75, quarterly, payable July 7 to holders of record June 25.
Lackawanna R. R. of New Jersey.—4 Per Cent Guaranteed, \$1.00, quarterly, payable July 1 to holders of record June 13.
Nashville & Decatur.—7½ Per Cent Guaranteed, 93¾¢, semi-annually, payable July 1 to holders of record June 20.
New York, Lackawanna & Western.—Common, \$1.25, quarterly, payable July 1 to holders of record June 13.
Norwich & Worcester.—8 Per Cent Preferred, \$1.50, payable July 1 to holders of record June 14.
Philadelphia, Baltimore & Washington.—Common, \$1.50, semi-annually, payable June 30 to holders of record June 14.
Pittsburgh, Ft. Wayne & Chicago.—Common, \$1.75, quarterly, payable July 1 to holders of record June 10; 7 Per Cent Preferred, \$1.75, quarterly, payable July 8 to holders of record June 10.
Rensselaer & Saratoga.—\$4.00, semi-annually, payable July 1 to holders of record June 14.
West Jersey & Seashore.—\$1.50, semi-annually, payable July 1 to holders of record June 12.

Average Prices of Stocks and Bonds

	June 10	Last week	Last year
Average price of 20 representative railway stocks..	29.02	28.46	25.15
Average price of 20 representative railway bonds..	64.70	64.56	51.49

Railway Officers

EXECUTIVE

Robert Sumner Shapard, general counsel of the Texas & Pacific, has been elected vice-president and general counsel, with headquarters as before at Dallas, Tex.

A. T. Lowmaster, vice-president and general manager of the Chesapeake & Ohio, has been elected also vice-president of the Toledo Terminal.

J. J. Eason, chief engineer of the Trona Railway, has been elected vice-president and general manager, with headquarters as before at Trona, Cal., succeeding **W. W. Lynch**.

Harry C. Kendall, vice-president and general manager of the Nezperce & Idaho, has been elected president and general manager, with headquarters as before at Nezperce, Idaho.

Charles A. Rausch, whose appointment as assistant secretary of the Baltimore & Ohio at Baltimore, Md., was reported in the *Railway Age* of May 31, will also continue as assistant to Samuel Willard, chairman of the board.

C. A. Veale, executive assistant on the Southern Pacific at San Francisco, Cal., has been appointed vice-president and general manager of the Northwestern Pacific, with headquarters at Sausalito, Cal., effective July 1, succeeding **Harry R. Gernreich**, whose appointment as superintendent of the Los Angeles division of the Southern Pacific is reported elsewhere in these columns.

Herman B. Earling, western representative, and formerly a vice-president of the Chicago, Milwaukee, St. Paul & Pacific, with headquarters at Seattle, Wash., will retire on June 15. Mr. Earling was born on October 30, 1862, entered railway service in 1879 as an agent and operator on the Milwaukee, later serving as an assistant train dispatcher and chief dispatcher. In 1893 he was promoted to trainmaster and four years later he was advanced to superintendent of terminals. Mr. Earling was appointed division superintendent at Marion, Iowa, in 1898, and in 1903 he was advanced to assistant general superintendent at Milwaukee, Wis. In 1906 he was transferred to Minneapolis, Minn., and the following year he was promoted to general superintendent of the Chicago, Milwaukee & Puget Sound (part of the C. M. St. P. & P.), with headquarters at Miles City, Mont., and Butte. In 1909 he was appointed general superintendent of the Milwaukee at Chicago and in February, 1912, he was advanced to assistant general manager with the same headquarters. In January, 1913, Mr. Earling was elected vice-president, with headquarters at Seattle. His title was later changed to western representative.

Donald J. Russell, superintendent of the Los Angeles division of the Southern

Pacific, with headquarters at Los Angeles, Cal., has been promoted, effective July 1, to assistant to the president, with headquarters at San Francisco, Calif., succeeding



Donald J. Russell

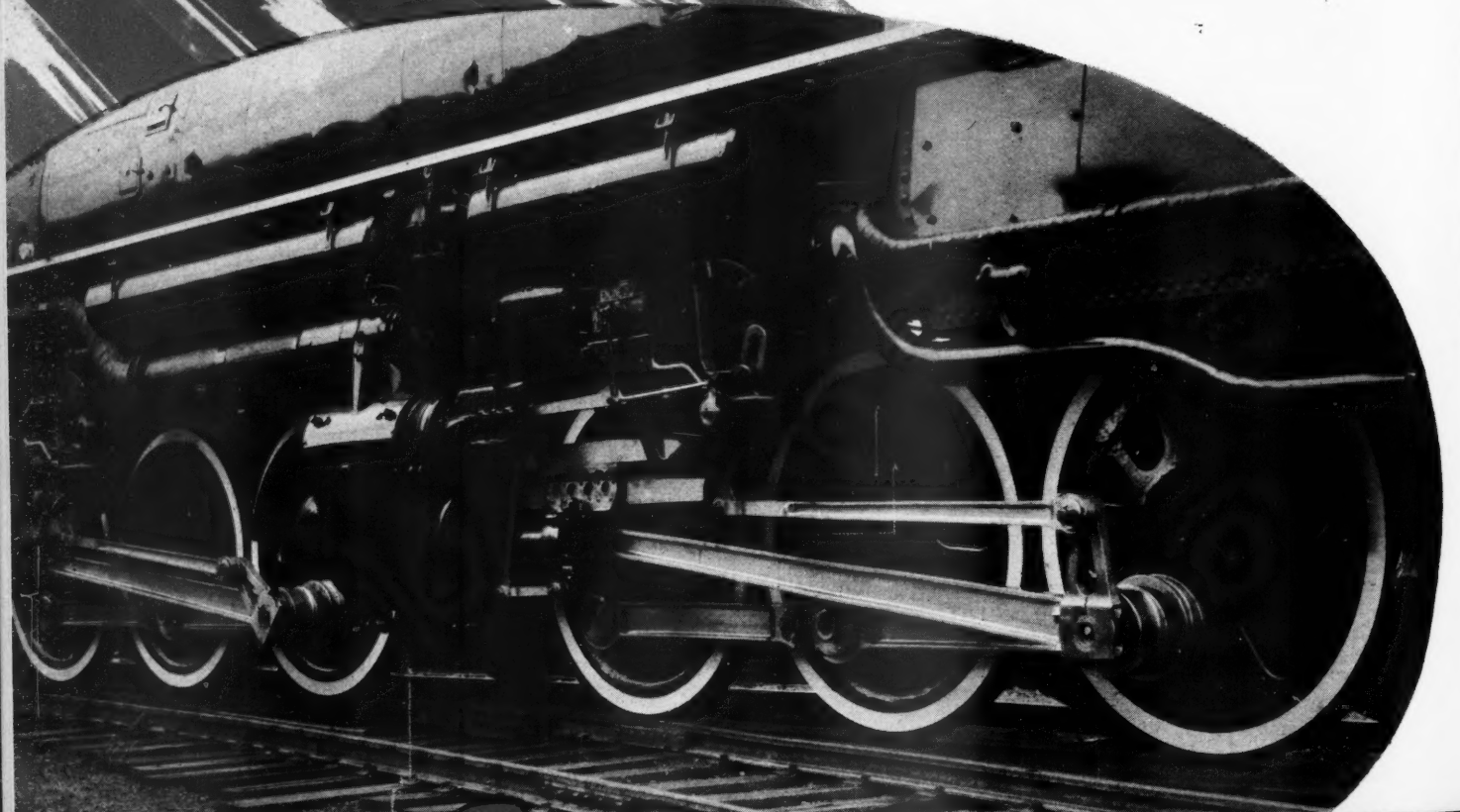
ing **Frank Mulks**, whose retirement on May 10 because of ill health was reported in the *Railway Age* of May 17. Mr. Russell was born at Denver, Colo., on January 3, 1900, and attended St. Mary's College, Oakland, Cal., and Stanford University. He entered railway service in 1920 as an assistant foreman of an extra gang on the Sacramento division of the Southern Pacific, and later became a section foreman, instrumentman and assistant engineer in the maintenance of way department and on construction work. In 1927 he was appointed roadmaster on the Portland division, with headquarters at Oakridge, Ore., and in 1928 he was promoted to assistant trainmaster. A year later Mr. Russell was advanced to trainmaster and in August, 1934, he was promoted to assistant superintendent of the Portland division, with headquarters at Portland. In September, 1937, he was advanced to assistant to the general manager, with headquarters at San Francisco, and on July 1, 1939, he was promoted to superintendent of the Los Angeles division, with headquarters at Los Angeles, which position he held until his recent promotion.

Jesse Newton Davis, general attorney on the Chicago, Milwaukee, St. Paul & Pacific, with headquarters at Seattle, Wash., has been appointed also assistant to the trustee, with the same headquarters, succeeding to the duties of **Herman B. Earling**, western representative, whose retirement on June 15, is reported elsewhere in these columns. Mr. Davis was born near Clearmont, Mo., on February 27, 1880. He graduated from Grand Island College, Grand Island, Neb., and in 1909, from the Chicago Kent College of Law. He was admitted to the Bar in the State of Illinois in 1909 and later took a major course in constitutional law at the University of Chicago in 1911-1912. He entered railway service on May 1, 1911, with the Chicago, Milwaukee & St. Paul as assistant general solicitor, which position he held until October 16, 1922, when he was appointed commerce counsel, the position he held until August 31, 1939, when he was promoted to general attorney with headquar-

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ALCO

Meet the



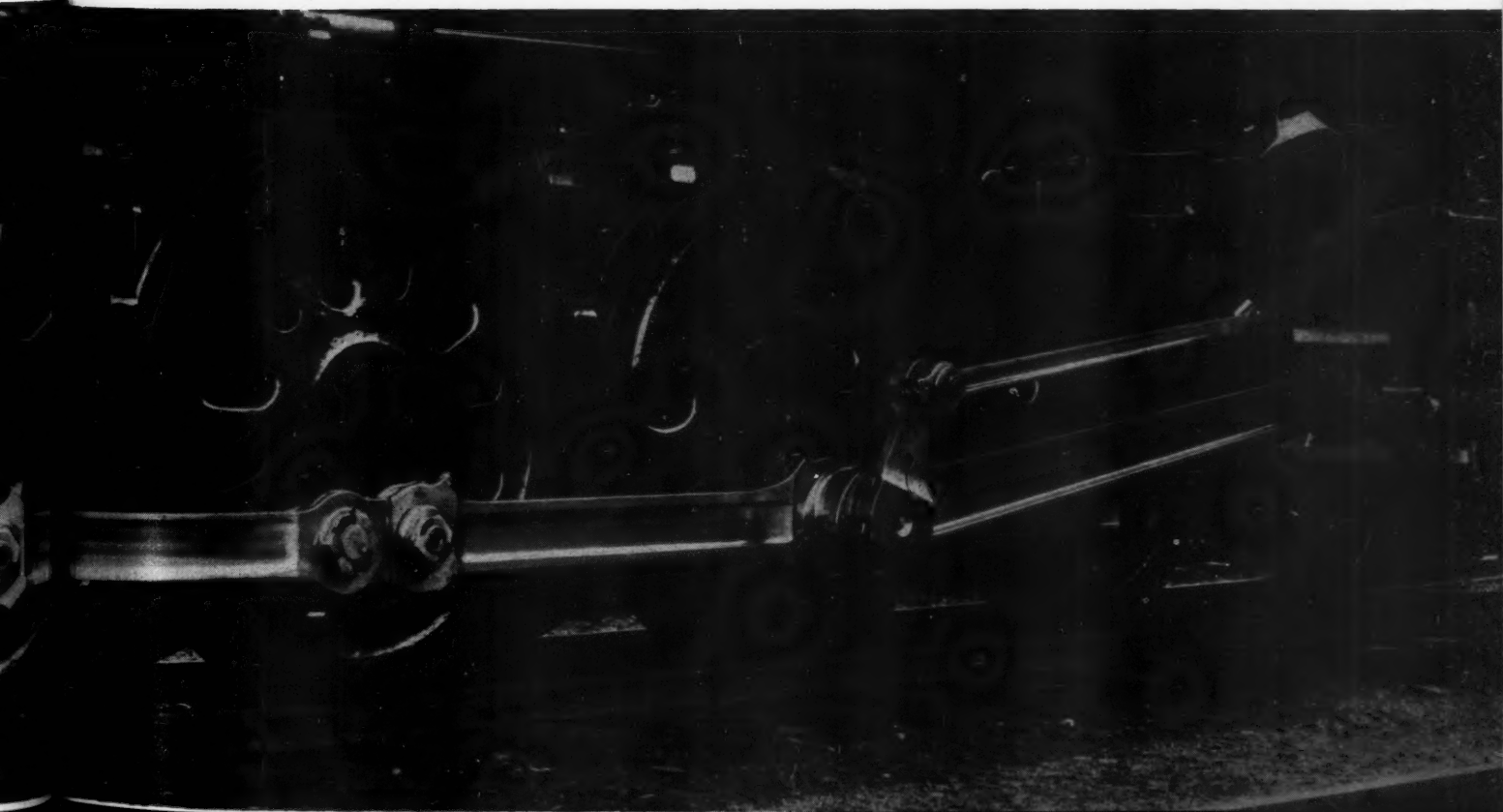
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ters at Seattle. Mr. Davis served three years on the Executive committee of the Association of Practitioners before the In-



Jesse N. Davis

terstate Commerce Commission; was chairman of the Railroad Law committee for the Western district in the litigation before the Commission in Ex Parte 115 and Ex Parte 123; and defended the decision of the Interstate Commerce Commission in the Chicago Switching Case, I. C. C. Docket 19610, before the United States Supreme Court.

FINANCIAL, LEGAL AND ACCOUNTING

Eaton Adams has been appointed assistant general attorney on the Chicago, Rock Island & Pacific, with headquarters at Chicago.

A. J. Clynch has been appointed commerce attorney for the Great Northern, Lines west, a newly created position, with headquarters at Seattle, Wash.

H. Oberfeld, assistant general auditor of the Southern Pacific of Mexico, has been promoted to general auditor, with headquarters at Guadalajara, Jal., succeeding **W. C. Doudna**, deceased.

A. C. Hartke, assistant auditor of the Cincinnati Union Terminal, Cincinnati, Ohio, has been promoted to auditor, succeeding **Roger F. Davies**, whose death on May 19 is reported elsewhere in these columns.

M. O. Ulsaker has been appointed freight claim agent on the Great Northern, with headquarters at Seattle, Wash., succeeding **George L. Seibert**, whose death on May 20 was reported in the *Railway Age* of May 31.

M. L. Bluhm, general attorney on the Chicago, Milwaukee, St. Paul & Pacific, has been promoted to general solicitor, with headquarters as before at Chicago, succeeding **Carl S. Jefferson**, whose death on June 2 was reported in the *Railway Age* of June 7.

C. H. Skinker, Jr., assistant general attorney of the St. Louis-San Francisco, has been promoted to general attorney, a newly created position, with headquarters as before at St. Louis, Mo., and **Walter**

Studdt, attorney, has been advanced to assistant general attorney, succeeding Mr. Skinker.

James Henry Miller, whose retirement on June 1 as freight claim agent of the Denver & Rio Grande Western, with headquarters at Denver, Colo., was reported in the *Railway Age* of May 31, was born at Pittsburgh, Pa., on July 16, 1872, and entered railway service on March 1, 1890, in the office of the general traffic manager of the D. & R. G. W. at Denver. In 1912 he became chief clerk to the freight claim agent and in 1918 he was advanced to freight claim agent, the position he held until his retirement.

L. A. Ehrhart, real estate agent on the Pennsylvania, with headquarters at Chicago, has been transferred to New York, succeeding **Charles W. Myers**, whose death on February 23 was reported in the *Railway Age* of March 1. **John W. Ewalt**, assistant real estate agent at Philadelphia, Pa., has been promoted to real estate agent at Chicago, succeeding Mr. Ehrhart, and **W. W. Mayer**, assistant to the vice-president in charge of real estate, purchases and insurance, has been appointed real estate agent at Philadelphia, replacing **J. P. Gauff**, who has been appointed assistant to the general real estate agent, with headquarters as before at Philadelphia.

Walter R. Irwin, claim adjuster on the Panhandle & Santa Fe at Amarillo, Tex., has been promoted to general claim agent of the P. & S. F., with the same headquarters, succeeding **Bowman Jarrott**, who died on April 18, following a heart attack. Mr. Irwin was born near Santa Rosa, N.



Walter R. Irwin

M., on October 4, 1902, and entered railway service in 1923, as assistant maintenance clerk in the superintendent's office on the P. & S. F. at Slaton, Tex. He was later transferred to Amarillo and on May 5, 1929, he transferred to the claim department as a claim adjuster, which position he held until his recent promotion.

OPERATING

Harry R. Gernreich, vice-president and general manager of the Northwestern Pacific, with headquarters at Sausalito, Cal., has been appointed superintendent of the Los Angeles division of the Southern Pa-

cific, with headquarters at Los Angeles, Cal., effective July 1. Mr. Gernreich succeeds **Donald J. Russell**, whose promotion to assistant to the president, with headquarters at San Francisco, Cal., is announced elsewhere in these columns. A photograph and biographical sketch of Mr. Gernreich were published on page 609 of the *Railway Age* of October 26, 1940, following his election as vice-president and general manager of the Northwestern Pacific.

C. O. Richardson, trainmaster on the Chicago, Rock Island & Pacific at Ft. Worth, Tex., has been transferred to El Reno, Okla.

L. L. Laughlin has been appointed general manager of the Harbor Belt Line, with headquarters at San Pedro, Cal., succeeding **James W. Mee**, deceased.

J. A. Griffin, assistant general yardmaster at East St. Louis, Ill., has been promoted to trainmaster at that point, a newly created position.

C. C. Fertig, acting superintendent on the Chicago, Rock Island & Pacific at El Reno, Okla., has been promoted to superintendent, with the same headquarters.

G. S. Lytle, transportation assistant on the Manitoba district of the Canadian Pacific, has been appointed supervisor of transportation, a change of title, with headquarters as before at Winnipeg, Man.

A. R. Banner, rule inspector on the Western region of the Canadian National, has been promoted to assistant superintendent, with headquarters at Portage la Prairie, Man., succeeding **J. M. Davidson**, who has retired.

E. E. Seise, chief clerk to the superintendent of transportation of Erie, has been appointed assistant to the superintendent of transportation, a newly created position, with headquarters as before at Cleveland, Ohio.

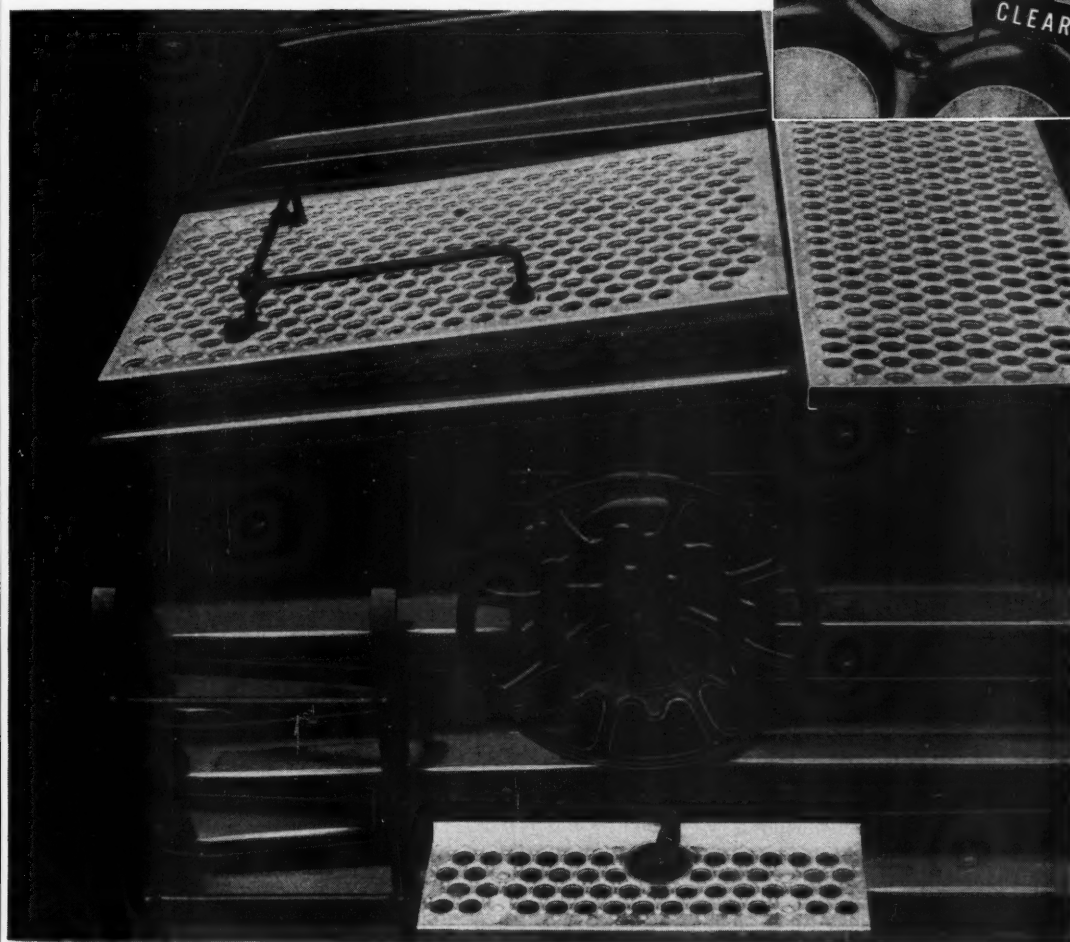
J. E. Guilfoyle has been appointed trainmaster and **I. A. Olp** has been appointed assistant trainmaster on the Buffalo (N. Y.) division of the New York Central. **F. R. Stafford** has been appointed trainmaster on the Rochester (N. Y.) division.

H. J. Miller, superintendent of the Sand Springs Railway, has been promoted to general manager-operation, with headquarters as before at Sand Springs, Okla., succeeding **H. T. Morrison**, who has retired. The position of superintendent has been abolished.

A. B. Saunders, master mechanic on the Canadian National at Belleville, Ont., has been appointed superintendent of the Hornepayne division, with headquarters at Hornepayne, Ont., succeeding **R. Hayes**, who has been transferred to the St. Thomas division, at St. Thomas, Ont., to succeed **A. F. Sharpe**, retired.

Perry C. Ausbrook, general agent for the Railway Express Agency, Inc., at New Orleans, La., has been promoted to superintendent of the Arkansas division, with

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headquarters at Little Rock, Ark., succeeding **W. O. R. Hannan**, who has been transferred to the Missouri division, with headquarters at St. Louis, Mo. Mr. Hannan relieves **J. M. Crawford**, who retired on May 31. **Thomas J. Seale**, division supervisor at Hammond, La., has been appointed general agent at New Orleans, replacing Mr. Ausbrook, and **Leslie D. Higgins**, general agent at Springfield, Mo., has been appointed division supervisor at Hammond, succeeding Mr. Seale. **Charles E. McGee**, district sales manager at St. Louis, has been appointed general agent at Springfield, relieving Mr. Higgins, and **V. B. Grimsley**, chief clerk to the superintendent at Memphis, Tenn., has been promoted to district sales manager at St. Louis, replacing Mr. McGee.

George A. Kirley, whose appointment as general manager of the Boston & Albany at Boston, Mass., was reported in the *Railway Age* of May 31, was born on August 31, 1880, at Fairfield, Vt., and received the degree of bachelor of science in civil engineering from the University of Michigan in 1907. He entered railroad service on July 15, 1907, as draftsman in the signal department of the New York



Kaiden-Keystone

George A. Kirley

Central at New York, serving in this capacity until May 1, 1908. On May 15, 1909, he became draftsman in the signal department of the Boston & Albany, becoming chief draftsman in February, 1912. Mr. Kirley became assistant engineer in the signal department on May 1, 1915, and on April 1, 1918, was appointed signal engineer. He was promoted to chief engineer on January 1, 1927, the position he held until his recent appointment as general manager.

TRAFFIC

W. M. Krames, division freight and passenger agent on the Atchison, Topeka & Santa Fe at San Bernardino, Cal., has been appointed assistant general freight agent at San Diego, Cal.

Earle G. Reed, supervisor of agricultural and industrial development of the Union Pacific, has been appointed general livestock agent, with headquarters as before at Omaha, Neb., succeeding to the duties of **J. D. Whitmore**, assistant gen-

eral freight traffic manager (livestock), who has retired because of illness. **Joe W. Jarvis**, agricultural agent at Boise, Idaho, has been promoted to supervisor of agricultural and industrial development at Omaha, relieving Mr. Reed.

E. C. Hicks, Jr., general freight agent on the Atlantic Coast Line, has been appointed assistant freight traffic manager, with headquarters as before at Wilmington, N. C. **H. V. Borjes**, assistant general freight agent has been appointed general freight agent, at Wilmington. **A. C. Low** has been appointed assistant to general freight agent at Wilmington, succeeding **J. G. Middleton**, who has been appointed assistant general freight agent, at Wilmington. **Addison E. Smith** has been appointed assistant to freight traffic manager, with headquarters at Wilmington. **S. P. Wigg**, assistant to general freight traffic manager, has been appointed assistant to freight traffic manager, with headquarters as before at Wilmington. **J. H. Hatcher**, general eastern freight agent at New York, has been appointed manager development service at Wilmington, succeeding **J. M. Fields**, who has been appointed assistant to general traffic manager. **E. E. Graham**, assistant to freight traffic manager, with headquarters at Wilmington, has been appointed general eastern freight agent, with headquarters at New York.

ENGINEERING AND SIGNALING

W. T. Richards has been appointed chief engineer of the Sacramento Northern, with headquarters at Sacramento, Cal., succeeding **H. O. Brown**.

L. V. Chausse has been re-appointed division engineer of the Idaho division of the Union Pacific, with headquarters at Pocatello, Idaho, succeeding **T. L. Pidcock**.

Russell L. Cook, office engineer in the engineering department of the Central of Georgia, with headquarters at Savannah, Ga., has been promoted to assistant chief engineer.

Charles H. Gaylord, instrumentman on the Chicago, Rock Island & Pacific at Des Moines, Iowa, has been promoted to acting division engineer of the Southern division, with headquarters at Ft. Worth, Tex., succeeding **Arthur C. Bradley**, who has been granted a leave of absence to engage in military service.

W. Jay Foster, engineer of grade crossings of the Erie, with headquarters at Cleveland, Ohio, retired on June 1 after 48 years service with that road. Mr. Foster was born in 1876 and entered railway service on July 1, 1893, as a chainman on the Buffalo division of the Erie. He was promoted through various positions to head draftsman at New York, and, in 1913, he returned to field work as district engineer in charge of double tracking the Chicago & Erie (now the Erie) from Deatur, Ind., to Griffith. Mr. Foster was promoted to engineer of grade crossings in 1925, which position he held until his retirement.

OBITUARY

Grier Ralston Smiley, chief engineer of the Louisville & Nashville, with headquarters at Louisville, Ky., died on June 10 at Miami Beach, Fla.

Roland A. Sperry, chairman of the Illinois Freight Association, died suddenly of a heart attack at his home in Winnetka, Ill., on June 10. Mr. Sperry was 58 years old.

Roger F. Davies, auditor of the Cincinnati Union Terminal, Cincinnati, Ohio, died in his home in that city on May 19, after an illness of several months. Mr. Davies was born in Cincinnati on November 20, 1880, and entered railway service as a messenger and office boy for the Cleveland, Cincinnati, Chicago & St. Louis (Big Four). For more than 40 years he was associated with that road and eventually became its assistant auditor. In 1931, he went with the Cincinnati Union Terminal as auditor, which position he held until his death.

Frederick S. Risley, former assistant vice-president and general manager of the New York Central and vice-president and terminal manager of the Cleveland Union Terminals, died on June 5 at his home in Watervliet, N. Y., at the age of 61. Mr. Risley was born on September 6, 1879, at Kingston, N. Y., and after attending high school, entered railroad service on January 1, 1898, as a telegraph operator on the River division of the West Shore (New York Central). He served subsequently as wire chief, train dispatcher, assistant trainmaster and trainmaster. In April, 1910,



Frederick S. Risley

he was appointed trainmaster of the Mohawk division at Albany, N. Y., and in 1912 became assistant superintendent of that division, with the same headquarters. Mr. Risley was appointed superintendent of the Buffalo division in April, 1924, and in October of that year he was transferred to the Syracuse division, becoming general superintendent at Albany in January, 1927. In December, 1936, Mr. Risley was appointed assistant general manager, lines Buffalo and East, at Syracuse, N. Y., and in November, 1937, became assistant vice-president and general manager at Cleveland, Ohio, which positions he held until he was granted a leave of absence on January 1, 1940.